TECHNICAL GUIDE

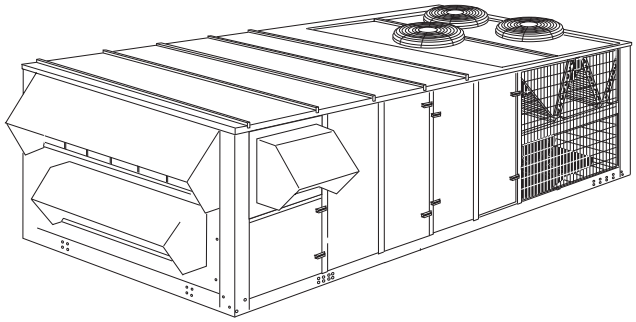
MILLENNIUM®

SINGLE PACKAGE ROOFTOP UNITS

Y32, Y33 & Y34

25, 30, & 40 TON

25 TON (10 EER)
30 & 40 TON (9.5 EER)



30 TON UNIT SHOWN

ISO 9001
Certified Quality
Management System

TOMORROW'S UNIT TODAY

GENERAL

Introducing the YORK Millennium 25, 30, & 40 ton rooftop line - units designed to provide peak performance and value both today and for years to come. Millennium units are manufactured at an ISO 9001 registered facility, and each rooftop is completely computer-run tested prior to shipment.

The Millennium is designed to be flexible enough to meet your needs today and in the future. The true value of YORK's Millennium is that it can be designed to fit any need, from cooling only, constant volume applications to variable air volume systems with variable frequency drive.

FEATURING:

- Cooling Only Units
- Cooling/Gas Heating Units (Natural) Standard or Modulating Gas Heat available
- Cooling/Electric Heating Units
- Cooling/Hot Water Heating Units
- Cooling/Steam Heating Units
- Industry Leading Efficiency
- Double Wall Construction
- Stainless Steel or Powder Coated Drain Pan
- Multiple Scroll Compressors
- Multiple Refrigeration Circuits
- Upgradable Motor Efficiency
- Enhanced Filtration
- Vibration Isolated Supply Fan and Motor
- Technicoated Evaporator and Condenser Coils
- High Capacity Evaporator Coils
- Single Power Point Connection
- Easy Access Hinged Doors
- Variable Air Volume
- Constant Air Volume
- Factory Installed Economizers/Disconnect/Convenience Outlet/Control Options
- Low Profile

MILLENNIUM SIMPLICITY® ELITE™ FEATURES:

- Single Button Programming and LED Display
- Designed to operate on both constant and variable air volume units
- 365-Day real time clock with automatic Daylight Savings time adjustment
- Occupancy Schedule allowing two schedules per day
- 20 Holiday schedules with programmable schedules that can start at any time, day or night
- Patented Comfort Ventilation operation for economical and comfortable economizer operation
- Demand Ventilation option to assure proper IAQ conditions based on available space or return air CO_2 levels
- Temperature/Humidity programming algorithm allows programmable limits to help control humidity in the space
- Smoke Purge automatically ventilates the space when smoke is detected
- Monitors dirty filters and proves airflow before starting heating or cooling
- Intelligent recovery to bring the space temperature up to occupied setting quicker and more economically

FOR DISTRIBUTION USE ONLY - NOT TO BE USED AT POINT OF RETAIL SALE

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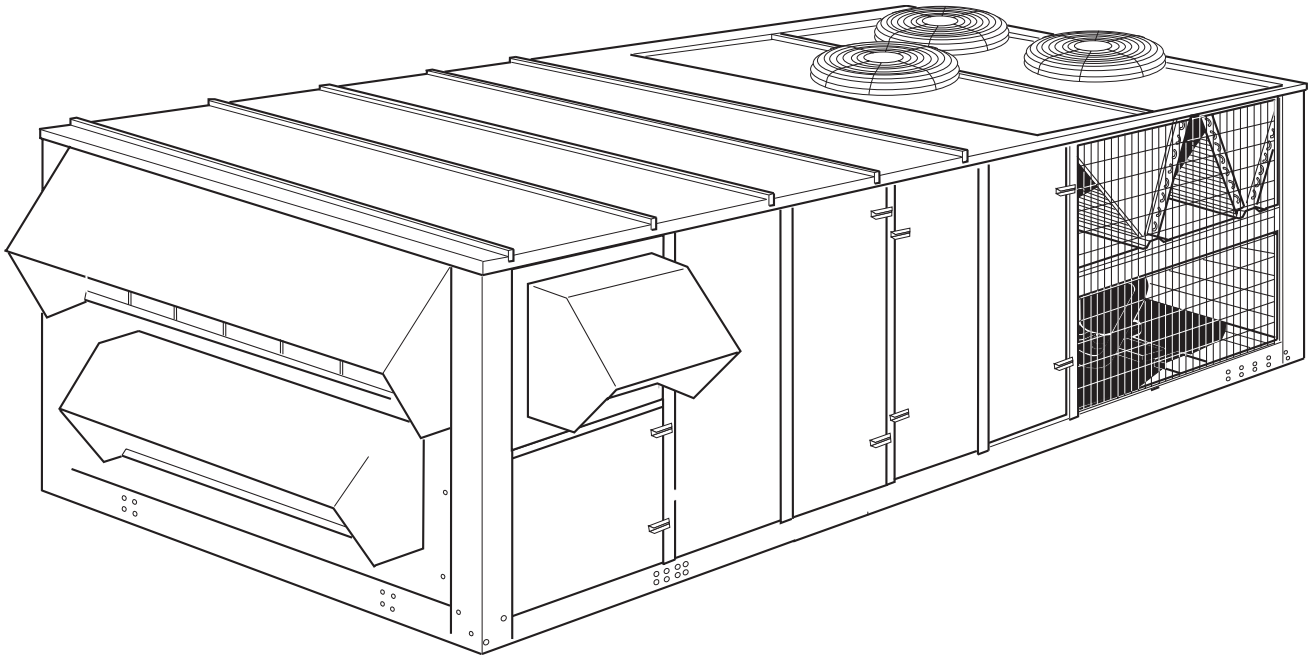
YORK Millennium®



OVERVIEW

Introducing the YORK Millennium 25, 30, & 40 ton rooftop line - units designed to provide peak performance and value both today and for years to come. When we asked our customers what they wanted in a new rooftop line, we were careful to listen to both the needs of today and tomorrow. So, you'll find that Millennium units not only help you solve today's problems, but can handle tomorrow's difficulties as well:

Industry Leading Efficiency - The Millennium's 9.5 EER (10 EER 25 ton) rating makes it the most frugal energy consumer in its class. When it comes to lower operating costs, Millennium simply outperforms the competition.

Double Wall Construction - Millennium units come double walled as standard. The galvanized sheet metal liner provides the best protection against microbial growth, helping both the unit and the indoor air stay fresh and clean. And, the rigid sheet metal inner liner keeps the insulation completely out of the air stream, eliminating concerns about fiberglass particles.

Drain Pan Whisks Away Condensate - Condensate is frequently the source of microbial contamination. Competitive drain pans often are insufficiently sloped to properly drain all of the condensate, causing drain pan corrosion and bacterial growth to begin almost immediately. The YORK design is sloped at the 1/4” per foot recommended by the ASHRAE 62.1-2004 ventilation draft standard, with an extra large drain connection capable of removing up to three gallons of condensate per minute. It is available in either powder coat painted steel or stainless steel for long life.

Efficient, Durable Scroll Compressors - The Millennium design uses industrial grade hermetic scroll compressors for peak efficiency and low noise operation. The compressor design is so durable that it can actually hold more liquid charge without slugging than is present in each refrigerant circuit at shipment, dramatically reducing the chances of ever slugging a compressor with liquid charge.

Multiple Refrigeration Circuits for Greater Turndown - The YORK Millennium unit has intertwined 10 ton circuits (12.5 ton circuits on the 25 ton) - giving the best unloading capability in the industry. With more and more designs requiring higher outside air quantities, the lower capacity capability is an outstanding way to neutralize outside air without over-conditioning the space on off-peak days. And, Millennium's high quality balance-port thermal expansion valves are more effective at metering refrigerant flow in part-load conditions, making Millennium a peak-performer across a wide capacity range.

FEATURES AND BENEFITS

When it comes to flexibility, Millennium really shines. Our customers were clear about one thing - not all installations are the same. Some have very simple needs, others are more involved. The YORK Millennium serves both markets - and all of those in between - extremely well. YORK engineers crafted a design which is both uniquely flexible and competitive, giving you the best of both worlds. In addition to a competitive base product, Millennium offers unparalleled flexibility. Optional features include:

Variable Air Volume - YORK gives you the ability to vary air volume by inlet guide vanes or variable frequency drive - the choice is yours. All Millennium VAV units come standard with hot gas bypass to give extended operation range.

Optional Head Pressure Control - For those applications where mechanical cooling is required below 40°F, optional low ambient operation allows compressor operation down to 0°F.

Easily Upgrade Motor Efficiency to Meet Tighter Codes - Optional high efficiency motors help you make simple upgrades to meet more demanding building and energy codes.

Enhanced Filtration Options - Millennium gives designers the flexibility to meet various IAQ requirements with a full range of rigid and throwaway filters at different efficiency levels.

Vibration Isolation - The Millennium's neoprene mounts are typically sufficient for most applications but when sound and vibration transmission are a major concern, YORK offers 1" and 2" isolation springs for even greater protection from supply air fan noise and vibration.

Corrosion Resistant Coils- Many industrial and seacoast applications require enhanced protection from corrosive environments.

Optional TechniCoated Coated Condenser and Evaporator Coils - Many industrial and seacoast applications require enhanced protection from corrosive environments. The special dipped phenolic coating process provides a high level of protection for the exposed condenser coil.

Optional Copper-Copper Condenser and Evaporator Coils - For corrosion resistance.

High Capacity Evaporator Coils - For those applications which require slightly more capacity than offered by the standard Millennium product, YORK offers the option of higher capacity evaporator coils, boosting cooling output without increasing unit size. (30 & 40 Ton R-22 only)

Variety of Exhaust Air Options - YORK Millennium offers a wide variety of exhaust air options, including barometric relief, non-modulating power exhaust, and modulating power exhaust. And, because Millennium units use forward-curved blowers for power exhaust fans, they can exhaust up to 100% of the nominal supply air at much greater static pressure loads than competitive units. **Not available on end return.**

NOTE: In most applications, the supply fan will keep the return at negative pressure. A barometric relief will function better when ducted to building space, not the return.

Optional Factory Installed Economizers - Millennium units offer economizers with Standard or Optional low leak dampers. Comparative enthalpy, single enthalpy and dry bulb control are available.

Optional Factory Installed Disconnect - A conveniently located actuator handle in the front of the unit can disconnect line power to the entire unit, eliminating the need for a field provided disconnect. The handle may also be locked in either position through the use of a standard padlock. Millennium's single point power connection makes this option particularly appealing. If desired, the disconnect may be ordered with a 115 volt, GFCI protected convenience outlet, including a factory wired transformer to power the outlet from the single point power connection; the convenience outlet remains operational when the disconnect is open.

Heating Done Your Way - Millennium offers the choice of natural gas standard or modulating gas heat, electric resistance heat, hot water heat, steam, or no heat at all. Very simply, the choice is yours.

INSTALLATION FEATURES

With YORK Millennium, high performance doesn't mean high complexity. YORK listened carefully to make sure that Millennium was as simple as possible, and service convenience comes standard with each unit. From a single curb size to the easy service access, you'll find that Millennium was designed to be easy from start to finish.

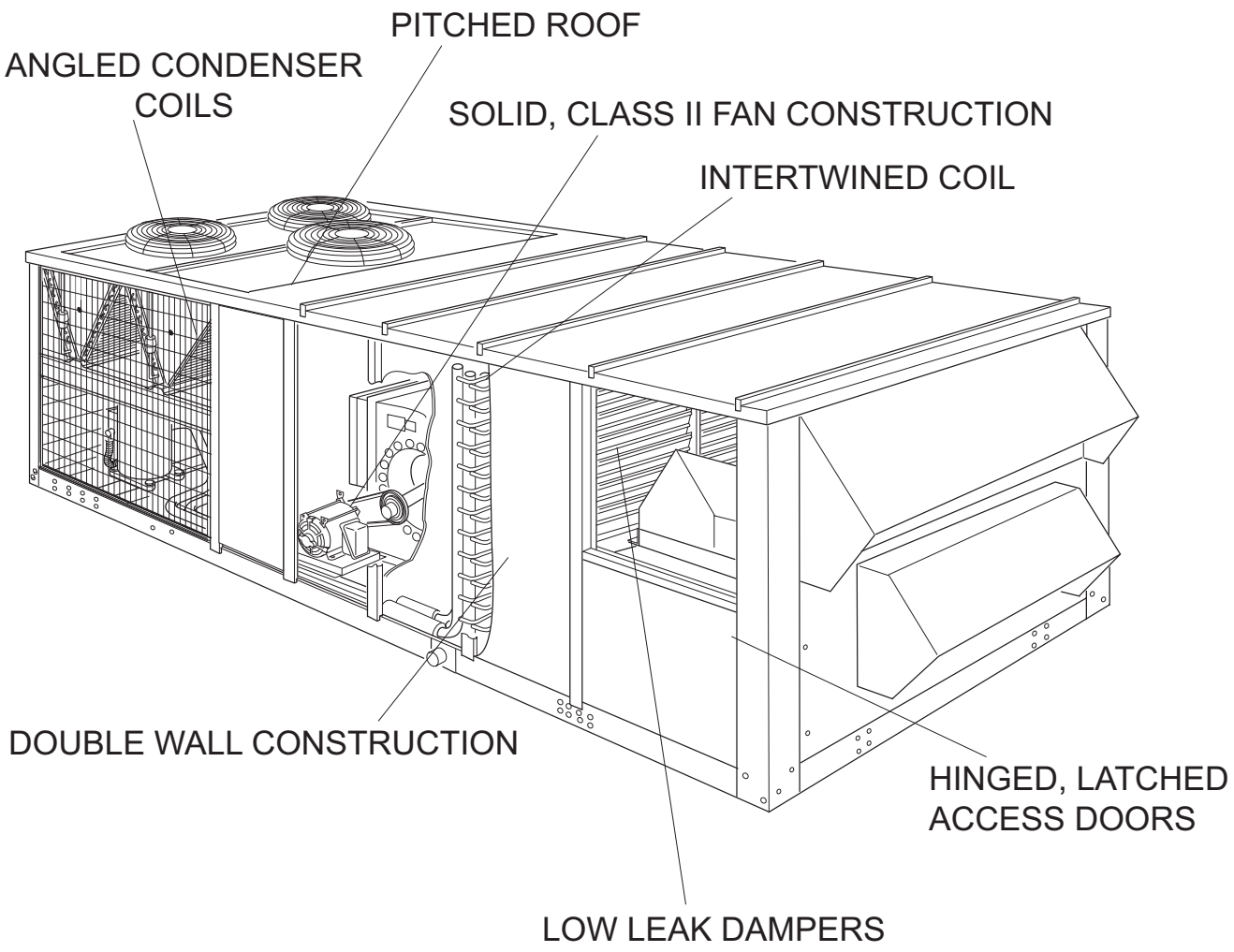
Full Range of Air Flows and Static Pressures - The Millennium design gives a complete offering of supply air flows and static pressure combinations to meet most every application requirement.

Single Power Point Connection - Millennium units have a single gas and electric connection, minimizing time at the job site. For further installation flexibility, power and gas connections may be brought up from the curb or through the side of the unit.

Simple Controls - Millennium's controls system is easy to understand and apply, and it doesn't lock you into proprietary devices. A choice for YORK Millennium today does not limit your choices tomorrow.

Rain Hoods Rotate Into Place - No bulky, field--installed rain hoods here. Millennium rain hoods ship rotated inside the unit. Once on the job, installer merely rotates the hood upward and puts in a few screws - an easy one-person job.

Excellent Access for Service - Service access on Millennium is a snap. Hinged and latched door options give access on both sides of the unit to all major components. Some doors have positive action slide latches for even greater ease of access. All service fittings are conveniently located to minimize time and effort.



CONSTRUCTION FEATURES

YORK's Millennium rooftop line is built for the long haul, with high end features and construction offered at a competitive price. Millennium units are manufactured at an ISO 9001 registered facility, and each rooftop is completely computer-run tested prior to shipment. Some of the valuable construction features of the Millennium which are not found on competitive units include:

Double Wall Construction - Each unit has both an exterior and an interior wall, which make for a more rigid design with panels and doors that are solid, not flimsy. The unit features a fully framed construction for even greater stability.

Powder Paint - Industry leading 1000 salt spray hour paint keeps the unit in great condition for years to come.

Low Profile - Millennium units stand only 64” above their curb, minimizing potential aesthetic conflicts.

Extended flue connection - Each gas unit ships with a field mounted external flue. The flue lifts all products of furnace combustion far above the unit - eliminating the possibility of corrosion in the furnace heat exchanger from recirculating flue gases.

Protective Covering - Special polyurethane sleeves which cover the distributor tubing keep distributor tubes from contacting each other and wearing out.

Built-in Hail Guard - Condenser coils angled at 30 degrees from the vertical are inherently protected from damage due to shipment, hail, etc.

Induced Draft Furnace - This design provides a positive exhaust of all combustion products.

LIST OF FEATURES AND BENEFITS

Standard Features

- 9.5 EER (10 EER on 25 ton)
- Double wall construction
- Major components have hinged and latched access doors
- Industrial duty scroll compressors
- Sturdy framed construction
- Sloped stainless steel or powder coated drain pan
- Separate 10 ton circuits (30 and 40 ton units) or 12.5 ton (25 ton unit)
- Intertwined evaporator coil
- Angled condenser coils for superior protection
- Single power point connection
- Through-the-curb or through-the-base utility connections
- Retractable outside air hoods
- Powder paint tested to 1000 salt spray hours
- Mechanical cooling from 40° F to 125° F
- 1-1/2” insulation
- Sloped unit roof with drip lip
- High and low refrigerant pressure protection
- Polyurethane sleeves to protect small diameter tubing
- Steel framing around blowers with deflection springs or rubber isolators for low vibration
- Fully factory packaged and run-tested
- 10 year gas heat exchanger warranty
- One year compressor warranty
- One year warranty on all parts

Factory Installed Options

- Economizer with standard or low leak dampers
- Natural gas standard or modulating gas heat with reliable induced draft design
- Electric heat in three sizes
- Variable air volume using either inlet guide vanes, wired for VFD (variable frequency drive), or factory installed VFD.
- 1, 2” blower isolator springs or rubber isolators
- A variety of blower horsepower offerings
- High efficiency motors
- High efficiency filtration
- Barometric relief
- Power exhaust of 100% of nominal air flow
- Technicoat corrosive resistant coating on condenser and evaporator coils
- Copper-Copper corrosive resistant condenser and evaporator coils
- 0°F low ambient operation of mechanical cooling
- Hot gas bypass (standard on all VAV units)
- High capacity evaporator coils
- Single unit disconnect
- Convenience outlet and transformer factory wired
- Hot water heating coil with one or two rows
- One row steam heating coil
- Simplicity® Elite™ controls
- ModLINC translator
- York Commercial Comfort System (YCCS)

Field Installed Accessories

- 7-Day Programmable Wall Thermostat-Can be used with or without remote sensors. Can be used on CV and VAV units when wall thermostat is required for scheduling and temperature control.
- Energy Recovery Ventilators- 8,000 and 13,000 CFM models available. Great for applications involving 30% or more of required outdoor air where energy use and comfort must be optimized.
- Wall Sensors- Remote space sensors used with CV or VAV unit for unit control via the Simplicity® Elite™ control. Standard sensor, sensor with override and sensor with override and + 5 degree adjustment.
- Simplicity® Transporter- Device allows internet control and monitoring of HVAC units equipped with Simplicity® Elite™ controls.
- Phase Monitor Kit- Includes control and wiring to monitor and protect the unit from phase reversal, phase loss and low voltage.
- Burglar Bars- Prevent any type of building entry through the RTU unit with bars that block the return and supply openings on downflow applications.
- Partial perimeter roofcurb- Designed for application on all 25-40 ton Millennium rooftop units. 14" height.
- Barometric Relief Kit- Provides barometric relief hood and dampers for duct mounting on units requiring end return.
- Natural Gas to Propane Conversion Kits- Contains orifices and gas valves parts to convert from Natural Gas to Propane. (Not available on modulating heat.)
- High Altitude Kit- Natural gas kit designed for natural gas heating applications between 2,000 and 6,000 feet above sea level.

NOMENCLATURE

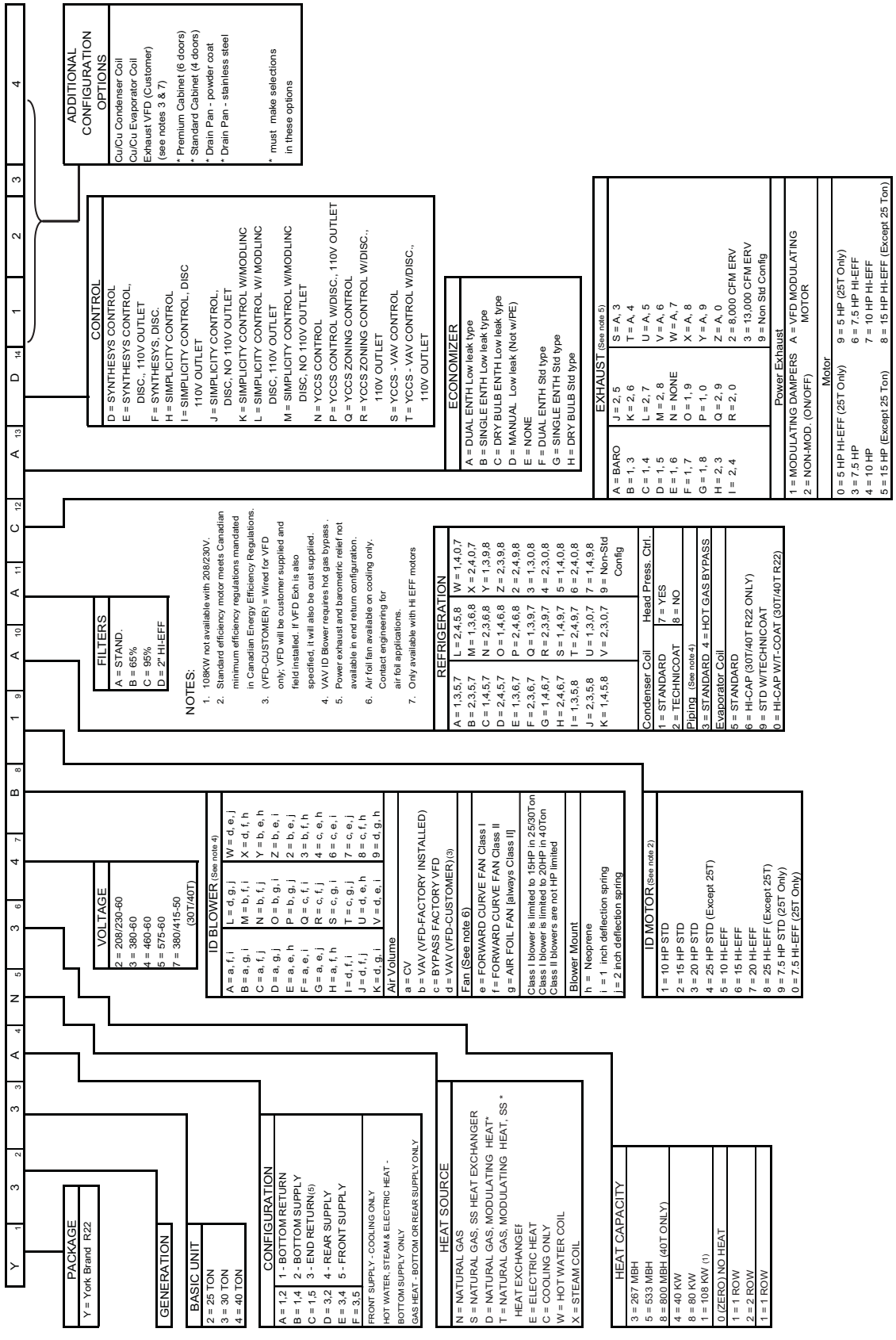

Y
PACKAGE
Y = York Brand R22
GENERATION
BASIC UNIT
2 = 25 TON
3 = 30 TON
4 = 40 TON
CONFIGURATION
A = 1,2 1 - BOTTOM RETURN
B = 1,4 2 - BOTTOM SUPPLY
C = 1,5 3 - END RETURN(5)
D = 3,2 4 - REAR SUPPLY
E = 3,4 5 - FRONT SUPPLY
F = 3,5
FRONT SUPPLY - COOLING ONLY
HOT WATER, STEAM & ELECTRIC HEAT - BOTTOM SUPPLY ONLY
GAS HEAT - BOTTOM OR REAR SUPPLY ONLY
HEAT SOURCE
N = NATURAL GAS
S = NATURAL GAS, SS HEAT EXCHANGER
D = NATURAL GAS, MODULATING HEAT*
T = NATURAL GAS, MODULATING HEAT, SS * HEAT EXCHANGEf
E = ELECTRIC HEAT
C = COOLING ONLY
W = HOT WATER COIL
X = STEAM COIL
HEAT CAPACITY
3 = 267 MBH
5 = 533 MBH
8 = 800 MBH (40T ONLY)
4 = 40 KW
8 = 80 KW
1 = 108 KW (1)
0 (ZERO) NO HEAT
1 = 1 ROW
2 = 2 ROW
1 = 1 ROW
VOLTAGE
2 = 208/230-60
3 = 380-60
4 = 460-60
5 = 575-60
7 = 380/415-50 (30T/40T)
ID BLOWER (See note 4)
A = a, f, i L = d, g, j W = d, e, j
B = a, g, i M = b, f, i X = d, f, h
C = a, f, j N = b, f, j Y = b, e, h
D = a, g, j O = b, g, i Z = b, e, i
E = a, e, h P = b, g, j 2 = b, e, j
F = a, e, i Q = c, f, i 3 = b, f, h
G = a, e, j R = c, f, i 4 = c, e, h
H = a, f, h S = c, g, i 6 = c, e, i
I = d, f, i T = c, g, j 7 = c, e, j
J = d, f, j U = d, e, h 8 = c, f, h
K = d, g, i V = d, e, i 9 = d, g, h
Air Volume
a = CV
b = VAV (VFD-FACTORY INSTALLED)
c = BYPASS FACTORY VFD
d = VAV (VFD-CUSTOMER) (3)
Fan (See note 6)
e = FORWARD CURVE FAN Class I
f = FORWARD CURVE FAN Class II
g = AIR FOIL FAN [always Class II]
Class I blower is limited to 15HP in 25/30Ton
Class I blower is limited to 20HP in 40Ton
Class II blowers are not HP limited
Blower Mount
h = Neoprene
i = 1 inch deflection spring
j = 2 inch deflection spring
ID MOTOR (See note 2)
1 = 10 HP STD
2 = 15 HP STD
3 = 20 HP STD
4 = 25 HP STD (Except 25T)
5 = 10 HI-EFF
6 = 15 HI-EFF
7 = 20 HI-EFF
8 = 25 HI-EFF (Except 25T)
9 = 7.5 HP STD (25T Only)
0 = 7.5 HI-EFF (25T Only)
FILTERS
A = STAND.
B = 65%
C = 95%
D = 2" HI-EFF
NOTES:
1. 108KW not available with 208/230V.
2. Standard efficiency motor meets Canadian minimum efficiency regulations mandated in Canadian Energy Efficiency Regulations.
3. (VFD-CUSTOMER) = Wired for VFD only; VFD will be customer supplied and field installed. If VFD Exh is also specified, it will also be cust supplied.
4. VAV ID Blower requires hot gas bypass.
5. Power exhaust and barometric relief not available in end return configuration.
6. Air foil fan available on cooling only. Contact engineering for air foil applications.
7. Only available with Hi EFF motors
REFRIGERATION
A = 1,3,5,7 L = 2,4,5,8 W = 1,4,0,7
B = 2,3,5,7 M = 1,3,6,8 X = 2,4,0,7
C = 1,4,5,7 N = 2,3,6,8 Y = 1,3,9,8
D = 2,4,5,7 O = 1,4,6,8 Z = 2,3,9,8
E = 1,3,6,7 P = 2,4,6,8 2 = 2,4,9,8
F = 2,3,6,7 Q = 1,3,9,7 3 = 1,3,0,8
G = 1,4,6,7 R = 2,3,9,7 4 = 2,3,0,8
H = 2,4,6,7 S = 1,4,9,7 5 = 1,4,0,8
I = 1,3,5,8 T = 2,4,9,7 6 = 2,4,0,8
J = 2,3,5,8 U = 1,3,0,7 7 = 1,4,9,8
K = 1,4,5,8 V = 2,3,0,7 9 = Non-Std Config
Condenser Coil Head Press. Ctrl.
1 = STANDARD 7 = YES
2 = TECHNICOAT 8 = NO
Piping (See note 4)
3 = STANDARD 4 = HOT GAS BYPASS
Evaporator Coil
5 = STANDARD
6 = HI-CAP (30T/40T R22 ONLY)
9 = STD W/TECHNICOAT
0 = HI-CAP W/T-COAT (30T/40T R22)
CONTROL
D = SYNTHESYS CONTROL
E = SYNTHESYS CONTROL, DISC., 110V OUTLET
F = SYNTHESYS, DISC.
H = SIMPLICITY CONTROL
I = SIMPLICITY CONTROL, DISC 110V OUTLET
J = SIMPLICITY CONTROL, DISC, NO 110V OUTLET
K = SIMPLICITY CONTROL W/MODLINC
L = SIMPLICITY CONTROL W/ MODLINC DISC, 110V OUTLET
M = SIMPLICITY CONTROL W/MODLINC DISC, NO 110V OUTLET
N = YCCS CONTROL
P = YCCS CONTROL W/DISC., 110V OUTLET
Q = YCCS ZONING CONTROL
R = YCCS ZONING CONTROL W/DISC., 110V OUTLET
S = YCCS - VAV CONTROL
T = YCCS - VAV CONTROL W/DISC., 110V OUTLET
ECONOMIZER
A = DUAL ENTH Low leak type
B = SINGLE ENTH Low leak type
C = DRY BULB ENTH Low leak type
D = MANUAL Low leak (Not w/PE)
E = NONE
F = DUAL ENTH Std type
G = SINGLE ENTH Std type
H = DRY BULB Std type
EXHAUST (See note 5)
A = BARO J = 2, 5 S = A, 3
B = 1, 3 K = 2, 6 T = A, 4
C = 1, 4 L = 2, 7 U = A, 5
D = 1, 5 M = 2, 8 V = A, 6
E = 1, 6 N = NONE W = A, 7
F = 1, 7 O = 1, 9 X = A, 8
G = 1, 8 P = 1, 0 Y = A, 9
H = 2, 3 Q = 2, 9 Z = A, 0
I = 2, 4 R = 2, 0 2 = 8,000 CFM ERV
3 = 13,000 CFM ERV
9 = Non Std Config
Power Exhaust
1 = MODULATING DAMPERS A = VFD MODULATING MOTOR
2 = NON-MOD. (ON/OFF)
Motor
0 = 5 HP HI-EFF (25T Only) 9 = 5 HP (25T Only)
3 = 7.5 HP 6 = 7.5 HP HI-EFF
4 = 10 HP 7 = 10 HP HI-EFF
5 = 15 HP (Except 25 Ton) 8 = 15 HP HI-EFF (Except 25 Ton)
ADDITIONAL CONFIGURATION OPTIONS
Cu/Cu Condenser Coil
Cu/Cu Evaporator Coil
Exhaust VFD (Customer) (see notes 3 & 7)
* Premium Cabinet (6 doors)
* Standard Cabinet (4 doors)
* Drain Pan - powder coat
* Drain Pan - stainless steel
* must make selections in these options

TABLE 1: GENERAL PHYSICAL DATA

UNIT SIZE	25 TON	30 TON	40 TON
UNIT EER / IPLV (STANDARD CAPACITY EVAPORATOR)	10.0 / 10.92	9.5 / 10.97	9.5 / 9.73
COMPRESSOR DATA			
NUMBER/SIZE	2 x 12.5 Ton	3 x 10 Ton	4 x 10 Ton
TYPE	Scroll	Scroll	Scroll
UNIT CAPACITY STEPS	50%, 100%	33%, 67%, 100%	25%, 50%, 75%, 100%
INDOOR FAN AND DRIVE			
NUMBER / TYPE	1 / FC	1 / FC	1 / FC
DIAMETER x WIDTH (INCHES)	22 x20	22 x 20	25 x 22
HP RANGE	7.5 - 20	10 - 25	10 - 25
CFM RANGE (FULL LOAD)	6,000 - 12,500	6,000 - 15,000	8,000 - 18,000
ESP RANGE	0.2" - 4.0"	0.2" - 4.0"	0.2" - 4.0"
EXHAUST FAN			
NUMBER/SIZE/TYPE	1/FC	2/FC	2/FC
HP RANGE (SINGLE MOTOR)	5 - 10	7.5 - 15	7.5 - 15
CFM	3,000 - 9,000	4,000 - 18,000	4,000 - 18,000
STANDARD EVAPORATOR COIL			
SIZE (SQ. FT.)	26.0	26.0	30.4
ROWS/FPI	3 / 13	3 / 16	4 / 13
HIGH CAPACITY EVAPORATOR COIL			
SIZE (SQ. FT.)	26.0	26.0	30.4
ROWS/FPI	2/16	4 / 16	4 / 16
CONDENSER COIL			
SIZE (SQ. FT.)	52.0	48.8	65.0
ROWS/FPI	2/16	2 /16	2 /16
CONDENSER FANS			
QUANTITY / DIAMETER (INCHES)	4 / 24	3 / 24	4 / 24
NOMINAL CFM	4,600	6,800	6,800
MOTOR HP	3 / 4	1.0	1.0
ELECTRIC HEAT			
kW RANGE	40 - 108	40 - 108	40 - 108
40 kW	1	1	1
80 AND 108 kW / CAPACITY STEPS (CV/VAV)	2 / 1	2 / 1	2 / 1
NATURAL GAS HEAT			
UNIT SIZE	25 TON	30 TON	40 TON
267 MBH CAPACITY STEPS (CV/VAV)	1 / 1	1 / 1	1 / 1
533 MBH CAPACITY STEPS (CV/VAV)	2 / 1	2 / 1	2 / 1
800 MBH CAPACITY STEPS (CV/VAV)	-	-	3 / 1*
267 MBH "MODULATING" CAPACITY STEPS (CV ONLY)	6 / 1	6 / 1	6 / 1
533 MBH "MODULATING" CAPACITY STEPS (CV ONLY)	12 / 2	12 / 2	12 / 2
800 MBH "MODULATING" CAPACITY STEPS (CV ONLY)	-	-	17 / 3
HOT WATER COIL			
SIZE (INCHES)	22.5" x 65"	22.5" X 65"	22.5" X 65"
CAPACITY	25 Ton	30 Ton	40 Ton
STEAM COIL			
SIZE (INCHES)		21" X 65"	
TYPE		Steam Coil	
FILTERS 2" TA			
NUMBER / SIZE	4 / 16 x 25 & 6 / 20 x 25	4 / 16 x 25 & 6 / 20 x 25	4 / 16 x 25 & 6 / 20 x 25
FACE AREA (SQ. FT.)	30.4	30.4	30.4
FILTERS 2" PLEATED, 30%			
NUMBER / SIZE	4 / 16 x 25 & 6 / 20 x 25	4 / 16 x 25 & 6 / 20 x 25	4 / 16 x 25 & 6 / 20 x 25
FACE AREA (SQ. FT.)	30.4	30.4	30.4
FILTERS 65% RIGID w/ 2" TA PREFILTERS			
NUMBER / SIZE	4 / 16 x 25 & 6 / 20 x 25	4 /16 x 25 & 6 / 20 x 25	4 / 16 x 25 & 6 / 20 x 25
FACE AREA (SQ. FT.)	30.4	30.4	30.4
FILTERS 95% RIGID w/ 2" TA PREFILTERS			
NUMBER / SIZE	4 ea. 16 x 25 / 6 ea. 20 x 25	4 ea. 16 x 25 / 6 ea. 20 x 25	4 ea. 16 x 25 / 6 ea. 20 x 25
FACE AREA (SQ. FT.)	30.4	30.4	30.4

* Unit Control Board with 3 heating outputs only, all other Unit Control Boards 2/1.

TABLE 2: REFRIGERANT CHARGE

UNIT (TONS)	MODEL	TYPE	FACTORY/ FIELD CHARGED	CHARGE			
				SYS #1	SYS #2	SYS #3	SYS #4
25	wo/HGBP	R22	Factory	25 lb. / 8 oz.	26lb / 0oz	-	-
25	w/HGBP	R22	Factory	26 lb. / 0 oz.	26 lb. / 0oz	-	-
30	wo/HGBP	R22	Factory	13 lb. / 4 oz.	13 lb. / 8 oz.	13 lb. / 8 oz.	-
30	wo/HGBP[1]	R22	Factory	14 lb. / 6 oz.	14 lb. / 10 oz.	14 lb. / 10 oz.	-
30	w/HGBP	R22	Factory	14 lb. / 0 oz.	13 lb. / 8 oz.	13 lb. / 8 oz.	-
30	w/HGBP[1]	R22	Factory	15 lb. / 2 oz.	14 lb. / 10 oz.	14 lb. / 10 oz.	-
40	wo/HGBP	R22	Factory	15 lb. / 5 oz.	15 lb. / 4 oz.	15 lb. / 5 oz.	15 lb. / 15 oz.
40	w/HGBP	R22	Factory	15 lb. / 13 oz.	15 lb. / 4 oz.	15 lb. / 5 oz.	15 lb. / 15 oz.

1. With high capacity evaporator coil.

SELECTION PROCEDURE

GIVEN:

Required Cooling Capacity	460,000 Btuh
Required Sensible Cooling	390,000 Btuh
Required Heating (Gas)	320,000 Btuh
Entering Air on Evaporator	83° F DB/ 67° F WB
Outside Design Temperature	95° F
Supply Fan CFM	13,000 CFM
External Static Pressure	1.25 IWG
Electrical Supply Voltage	460-3-60
Economizer Required	
2” Throw Away Filters	
Constant Volume	

SELECT UNIT:

1. Determine nominal tons:

   460,000 / 12,000 = 38.33 Tons
   Thus, a nominal 40 ton unit is selected.

2. Reference Cooling Capacity Table for a 40 ton unit with standard evaporator coil.

   a. Locate the table for a standard evaporator coil with 95° F air on the condenser.

   b. Enter table at 13,000 CFM and 67°F WB air on evaporator

   c. Trace to 83° F Entering Dry Bulb column.

   d. Read 493 MBH total capacity and 403 MBH sensible capacity.

   The 40 ton unit will meet the cooling requirements. From the nomenclature, the unit will be a Y34. Choose the appropriate configuration for the next digit. Assuming bottom return and supply, the fourth digit would be an “A,” making the model Y34A.

3. Find Gas Heating Capacity Table.

   a. Trace down Output column.

   b. Find output which exceeds 320,000 Btuh requirement. The N5 option gives 426 MBH output.

   c. Ensure that it is offered in the Y34 unit. Read option model as N5.

   From the basic nomenclature, the model now becomes Y34AN5. Add voltage code of “4” for 460-3-60. Nomenclature becomes Y34AN54.

SELECT FAN SPEED AND HORSEPOWER REQUIREMENTS OF SUPPLY AIR FAN

1. Find Supply Air Performance Tables for the 40 ton unit.

   a. Check footnotes and make necessary additions or deductions to static resistance of ductwork:

Ductwork static resistance	1.25 IWG
Economizer static resistance addition (interpolate) =.25 IWG + Gas Heat (High) =	0.5 IWG
Total Static Resistance	2.0 IWG

   b. Enter Fan Performance Table at 13,000 CFM and 2.0 IWG static pressure:

   RPM = 690
   BHP = 10.7

NOTE: Either a Class I or Class II blower could be used.

   c. Enter the Fan Motor Drive Tables. Selecting a 15 hp motor allows (service factor of 1.5) for a maximum operating BHP greater than the 10.7 BHP requirement.

SIZE OVERCURRENT PROTECTION DEVICE AND DETERMINE CIRCUIT AMPACITY

1. Find electrical tables for the basic 40 ton unit.

   a. Enter table for 460-3-60 voltage.

   b. Find 15 hp in the Supply Air Fan column.

   c. Trace to Minimum Circuit Ampacity column - read 104.

   d. Trace to Max. Fuse/Breaker Size column - read 110.

   e. Size wire and overprotection device accordingly.

   f. Check all footnotes.

TABLE 3: STANDARD GAS HEATING CAPACITIES

Gas Heat Option	Available on Models	Input Capacity (MBH)[1]		Output Capacity (MBH)[2]	Gas Rate, Cu. Ft./Hr.[3]	
		1st Stage	Total		1st Stage	Total
N3	Y32/Y33/Y34	267	267	213	247	247
N5	Y32/Y33/Y34	267	533	426	247	495
N8	Y34 ONLY	267[4]	800	638	247	742

1. Heating capacity is only staged on CV models. VAV models use only one stage at full capacity.
2. Blower motor heat not included.
3. Based on a heat content of 1075 Btu/Ft.[3]

$$\text{GAS RATE} = \frac{\text{Input MBH}}{(1.075 MBH)/Ft}.^{3}$$

4. Unit Control Board with 3 heating outputs only. For all other Unit Control Boards the 1st Stage is 533 MBH.

TABLE 4: TEMPERATURE RISE

Ton	Modules		
	1	2	3
25	5-35	25-55	-
30	5-35	20-50	-
40	5-30	10-45	25-55

TABLE 5: MINIMUM HEATING CFM

Ton	Modules		
	1	2	3
25	5,644	7,183	-
30	5,644	7,901	-
40	6,584	8,779	13,169

TABLE 6: MODULATING GAS HEATING CAPACITIES

Gas Heat Option	Available on Models	Input Capacity (MBH)		Steps	Output Capacity (MBH)[1]	Gas Rate, Cu. Ft./Hr.	
		Minimum	Maximum			Minimum	Maximum
D3[2]	Y32/Y33/Y34	69	267	6	213	64	247
D5[2]	Y32/Y33/Y34	69	533	12	426	64	495
D8[2]	Y34 ONLY	69	800	17	638	64	744

1. Output Capacity at Full Fire.
2. Modulating Gas Heat available on CV models only.

TABLE 7: MODULATING HEAT

Stages of Gas Control (% of Full Heat Output)					
Gas Heat Option	**Available on Models**	**Step**	**Input**	**Output**	**% of total output**
D3 (Turn down ration 3.8 to 1)	Y32, Y33, Y34	1	69,333	55,466	26%
		2	106,666	85,333	40%
		3	165,332	132,266	62%
		4	202,665	162,132	76%
		5	229,332	183,466	86%
		6	266,666	213,333	100%
D5 (Turn down ration 7.7 to 1)	Y32, Y33, Y34	1	69,333	55,466	13%
		2	106,666	85,333	20%
		3	165,332	132,266	31%
		4	202,665	162,132	38%
		5	229,332	183,466	43%
		6	266,666	213,333	50%
		7	325,331	260,265	61%
		8	362,664	290,132	68%
		9	389,331	311,465	73%
		10	426,664	341,331	80%
		11	495,997	396,798	93%
		12	533,330	426,664	100%
D8 (Turn down ration 11.5 to 1)	Y34 Only	1	69,333	55,466	9%
		2	106,666	85,333	13%
		3	165,332	132,266	21%
		4	202,665	162,132	25%
		5	229,332	183,466	29%
		6	266,666	213,333	33%
		7	325,331	260,265	41%
		8	362,664	290,132	45%
		9	389,331	311,465	49%
		10	426,664	341,331	53%
		11	495,997	396,798	62%
		12	533,330	426,664	67%
		13	586,663	469,330	73%
		14	655,996	524,797	82%
		15	693,329	554,663	87%
		16	762,662	610,130	95%
		17	799,995	639,996	100%

TABLE 8: ELECTRIC HEATING CAPACITIES

Electric Heat Option	**Available on Models**	**Rated Voltage**	**Nominal KW**	**Nominal MBH[1]**	**MBH and KW per Stage[2]**			
					Stage 1		**Stage 2**	
					KW	**MBH**	**KW**	**MBH**
E4	Y32, Y33, Y34	240[3]/480[4]/575	40	137	40	137	0	0
E8	Y32, Y33, Y34	240[2]/480[3]/575	80	273	40	137	40	136
E1	Y32, Y33, Y34 (460 & 575 volt only)	480[3]/575	108	369	72	246	36	123

1. Supply air fan motor heat not included.
2. Heating capacity is only staged on CV models. VAV models use only one stage at full capacity.
3. For 208 volts, multiply kW and MBH values by .751. For 230 volts, multiply kW and MBH values by .918
4. For 460 volts, multiply kW and MBH values by .918.

HOT WATER HEATING[1]

The YORK Millennium Rooftop units (30 - 40 Ton sizes) can be furnished with a YORK hot water coil as the source of heat (Bottom Supply Only). A one or two row coil will be factory installed in the heating section downstream of the supply air fan and just above the supply air opening in the bottom of the unit.

The hot water control valve will not be provided. The installer will need to field supply a water valve. The installer must also connect the hot water piping, and valve wiring at the job site for the hot water heat section to be operational.

For all hot water coils the entering water temperature should not exceed 200°F.

PHYSICAL DATA HOT WATER COIL - 1 ROW

Coil Casing . . . . . Galvanized Steel
Coil Construction. . . . . Al Fin / Cu. Tube
Rows Deep 1
Fin Thickness . . . . . .006”
Tube Wall . . . . . .016”
Tubes / Circuit. 2
Fins Per Inch. 8
Tubes High . . . . . 22.50”
Tube Length . . . . . 65”
Face Area . . . . . 10.16ft.^{2}
Weight. . . . . 71lbs.
Operating Weight . . . . . 83lbs.

TABLE 9: WATER PRESSURE DROP (1 ROW, 25 & 30 TON)

GPM	10	20	30	40
WATER PRESSURE DROP	0.9	3.0	6.0	10.0

TABLE 10: STATIC RESISTANCE HOT WATER COIL (25 & 30 TON)

CFM	6000	8000	10000	15000
AIR PRESSURE DROP 1 ROW	0.07	0.11	0.16	0.32
AIR PRESSURE DROP 2 ROW	0.14	0.23	0.33	0.65

NOTE: Water pressure drop numbers are based on 60°F entering air temperature, 2.00” maximum air pressure drop across the hot water coil(s). ARI certified ratings at covering other conditions are available upon request. Hot water coils are approved for use with glycol (rates available upon request).

⚠WARNING

DO NOT use tin based solder. Brazing with tin based solder could cause equipment damage or possible injury to OCCUPANTS of the structure that is being conditioned.

TABLE 11: HOT WATER COIL (1 ROW, 25 & 30 TON)[1]

GPM	CFM	CAPACITY (MBH) AT ENTERING WATER TEMPERATURE			
		140 °F	160 °F	180 °F	200 °F
10	6000	91.4	115.3	139.3	163.6
	8000	102	128.8	155.8	182.9
	10000	110.4	139.5	168.8	198.4
	12000	117.3	148.4	179.6	211.2
	15000	125.9	159.2	192.9	226.9
20	6000	103	129.4	156	182.7
	8000	116.8	147	177.2	207.7
	10000	128.2	161.3	194.7	228.2
	12000	137.8	173.6	209.5	245.6
	15000	150	189	228.2	267.8
30	6000	107.6	135	162.5	190.1
	8000	122.8	154.3	185.8	217.5
	10000	135.5	170.3	205.1	240.2
	12000	146.4	184	221.8	259.7
	15000	160.3	201.6	243	284.8
40	6000	110.1	138	166	194.1
	8000	126.1	158.2	190.5	222.8
	10000	139.6	175.2	210.9	246.8
	12000	151.2	189.8	228.5	267.5
	15000	166.1	208.6	251.3	294.1

1. Based on 60°F entering air temperature, 2.00” maximum pressure drop across the hot water coil.

PIPING CONNECTIONS

The hot water piping must enter the unit through the floor of the heat section compartment. The access doors to the compartment are gasketed so the compartment can be sealed. However, as added protection for water leakage into the space, the piping access holes should be sealed with a heat resistant mastic (see the following illustration for approximate location of the compartment and piping connections.

1. Hot water, steam or electric heat is not available for front or rear supply.

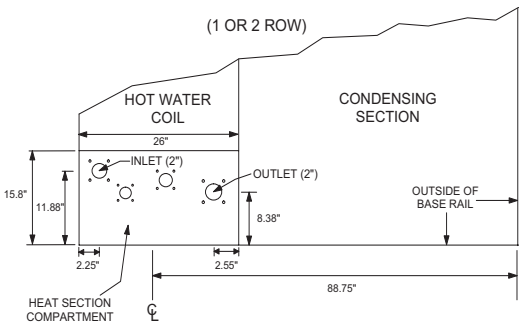


FIGURE 1 - HOT WATER PIPING CROSS-SECTION

TABLE 12: STATIC RESISTANCE HOT WATER COIL (1 ROW, 40 TON)

CFM	8000	11000	14000	20000
AIR PRESSURE DROP 1 ROW	0.11	0.19	0.29	0.52
AIR PRESSURE DROP 2 ROW	0.23	0.39	0.58	1.06

TABLE 13: HOT WATER COIL (1 ROW 40 TON)[1]

GPM	CFM	CAPACITY (MBH) AT ENTERING WATER TEMPERATURE			
		140 °F	160 °F	180 °F	200 °F
10	8000	102	128.8	155.8	182.9
	11000	114	144.1	174.4	205.1
	14000	123.2	155.9	188.8	222.1
	17000	130.6	165.4	200.4	235.8
	20000	136.8	173.3	210.1	247.3
20	8000	116.8	147	177.2	207.7
	11000	133.2	167.7	202.3	237.2
	14000	146.2	184.2	222.4	260.8
	17000	157	197.9	239	280.5
	20000	166.2	209.6	253.2	297.3
30	8000	122.8	154.3	185.8	217.5
	11000	141.2	177.4	213.8	250.3
	14000	155.9	196.1	236.4	276.9
	17000	168.3	211.8	255.4	299.3
	20000	179.1	225.3	271.8	318.6
40	8000	126.1	158.2	190.5	222.8
	11000	145.6	182.7	220	257.5
	14000	161.4	202.6	244.1	285.8
	17000	174.7	219.5	264.5	309.7
	20000	186.3	234.2	282.3	330.6

1. Based on 60°F entering air temperature, 2.00” maximum pressure drop across the hot water coil.

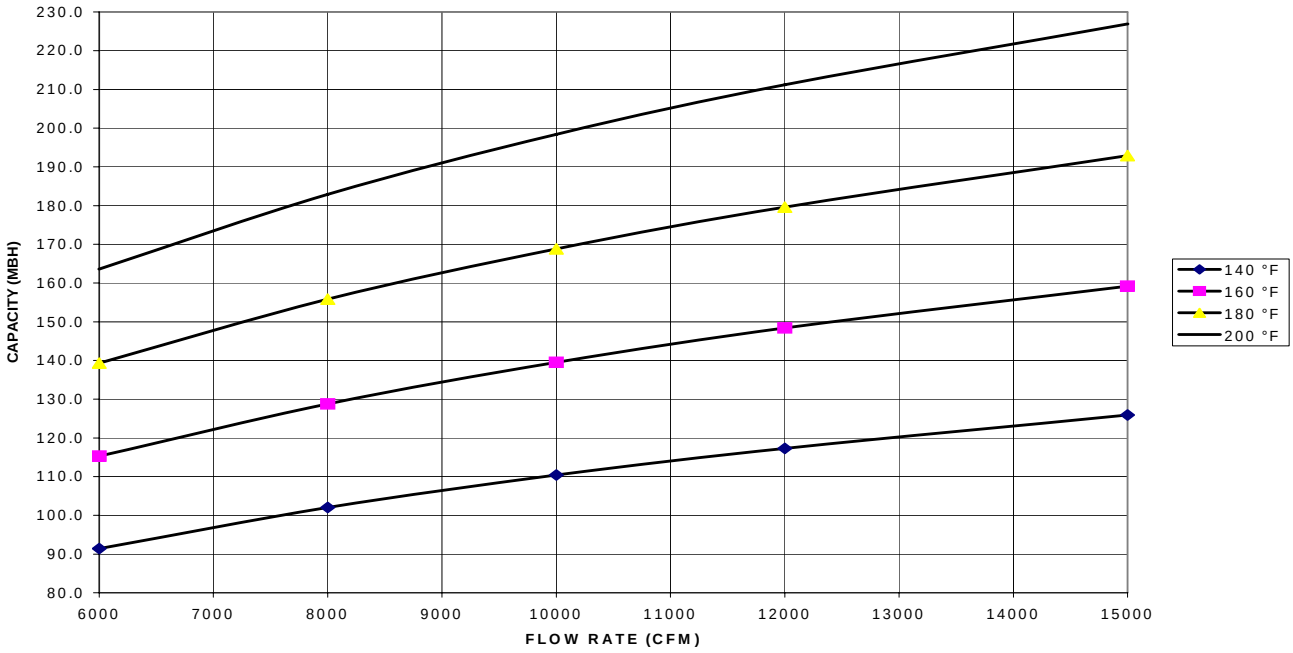


FIGURE 2 - HOT WATER COIL - 25 & 30 TON, 1 ROW, AT 10 GPM

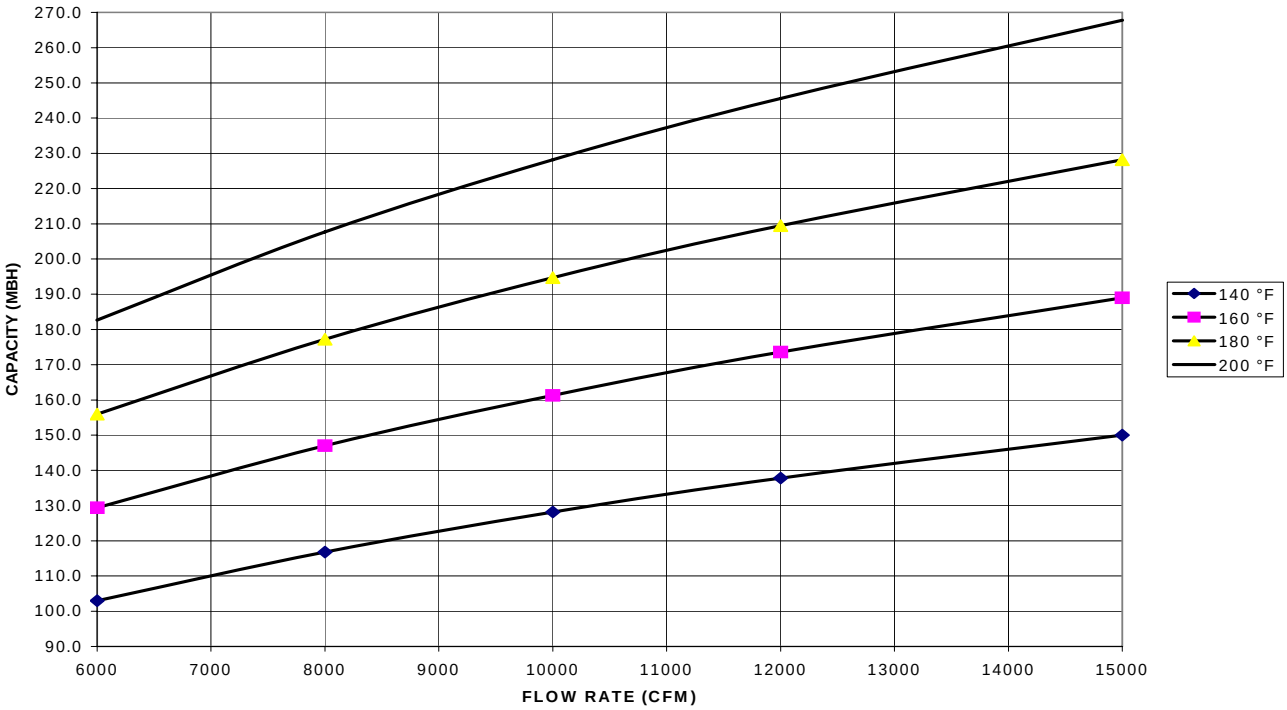


FIGURE 3 - HOT WATER COIL - 25 & 30 TON, 1 ROW, AT 20 GPM

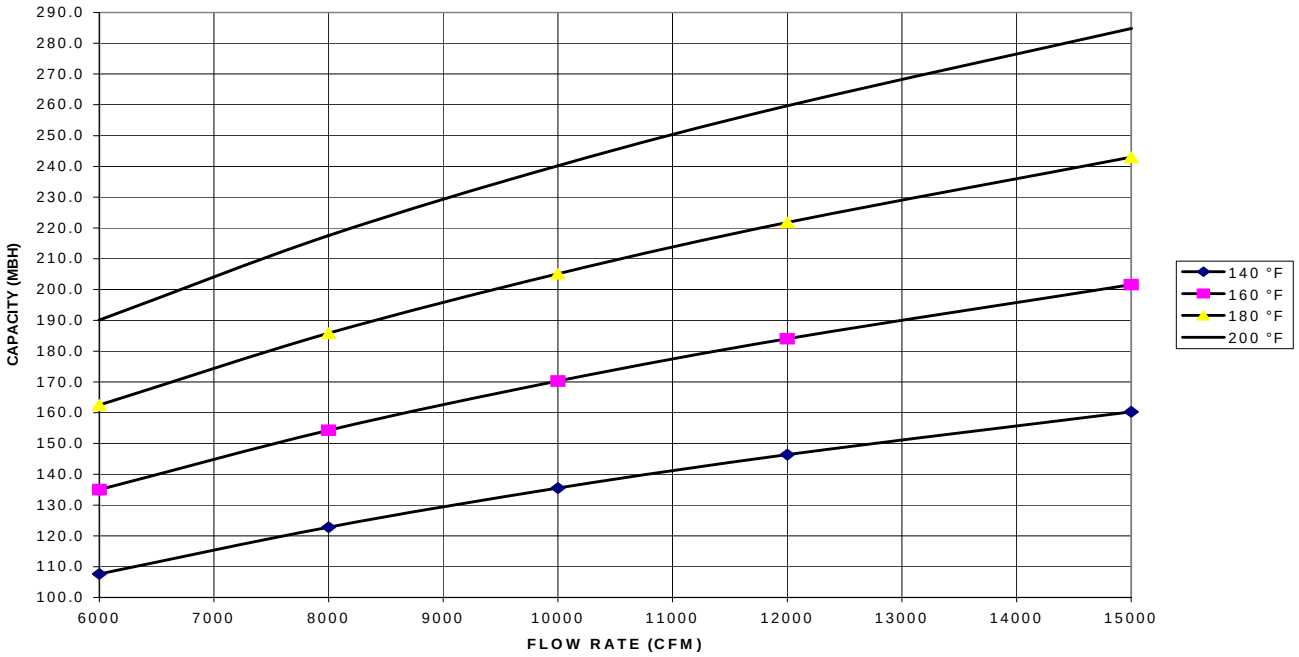


FIGURE 4 - HOT WATER COIL - 25 & 30 TON, 1 ROW, AT 30 GPM

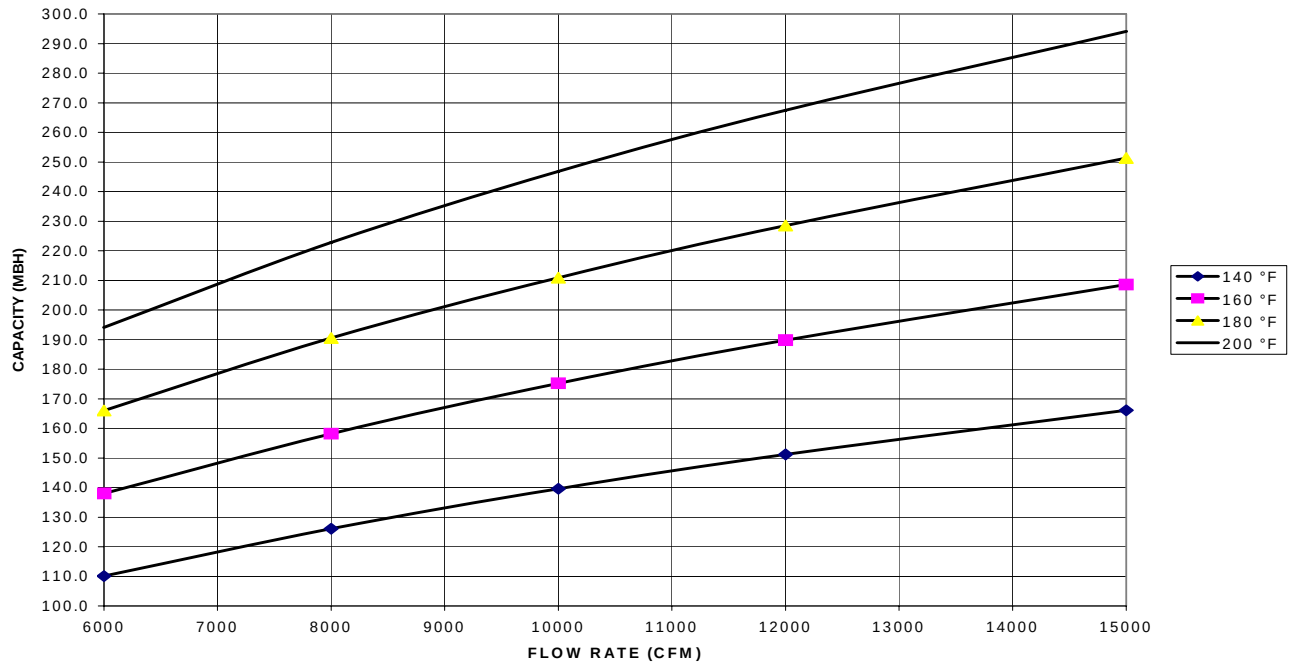


FIGURE 5 - HOT WATER COIL - 25 & 30 TON, 1 ROW, AT 40 GPM

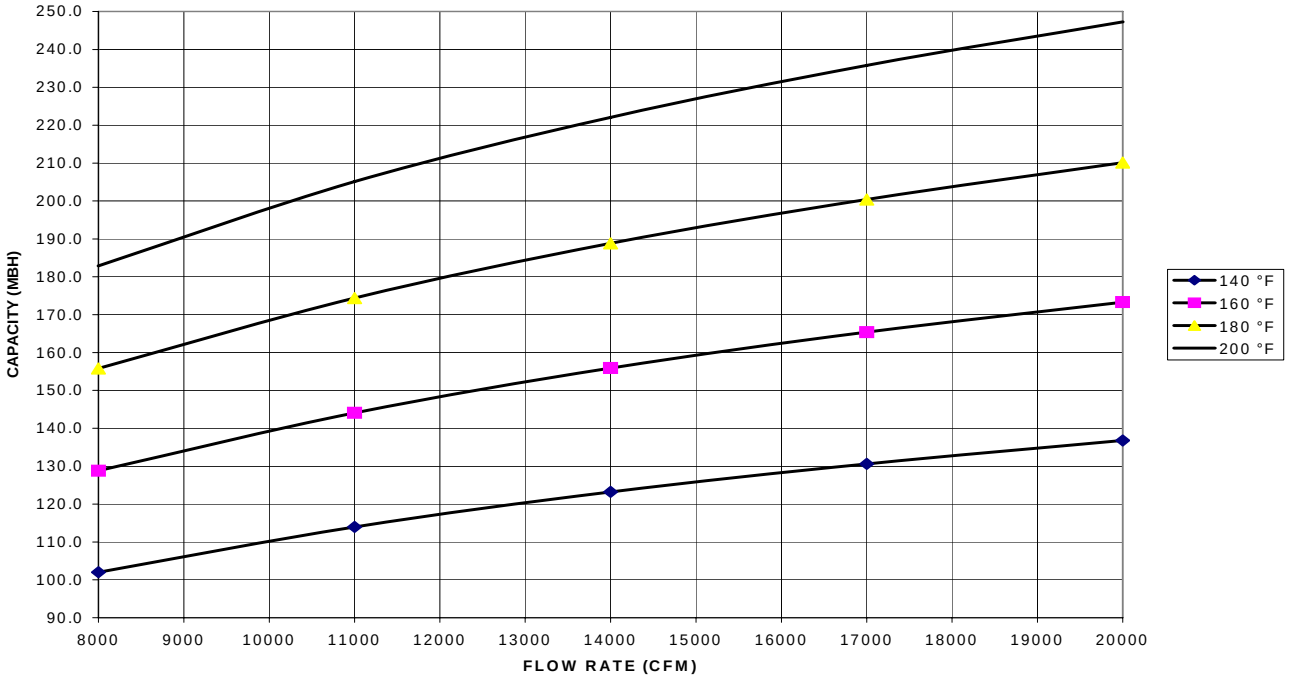


FIGURE 6 - HOT WATER COIL - 40 TON, 1 ROW, AT 10 GPM

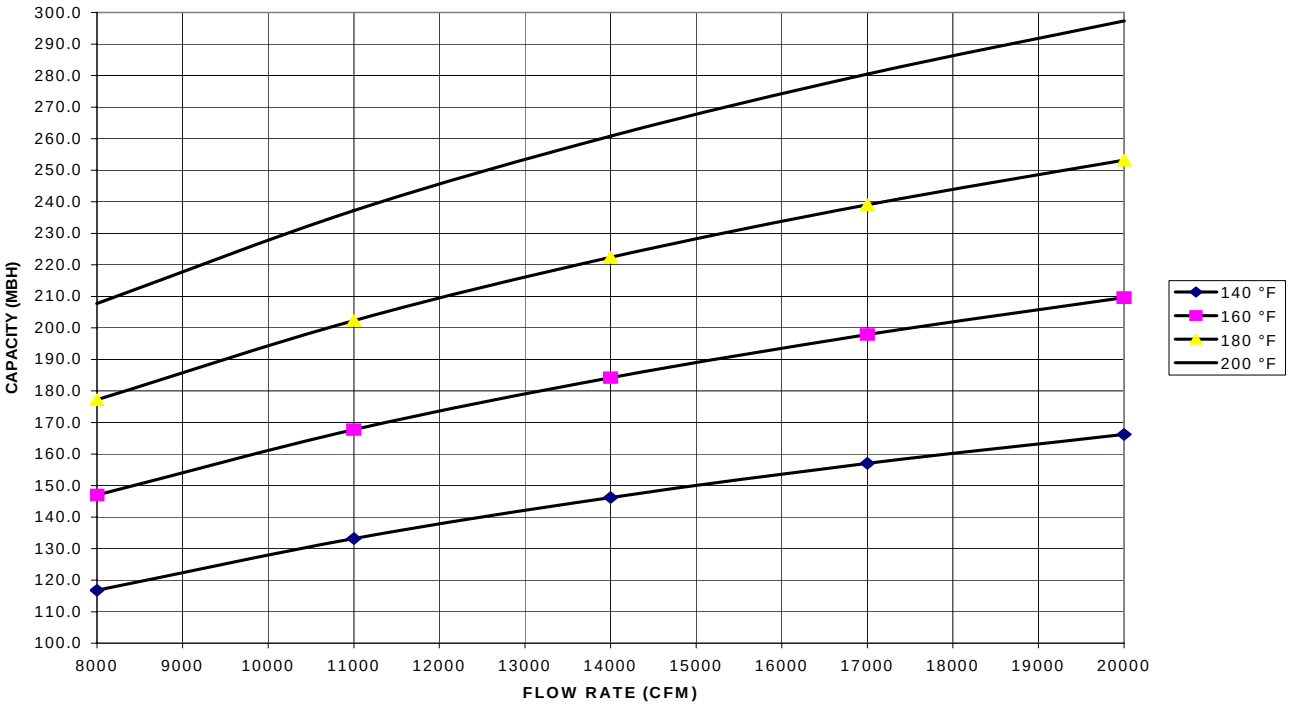


FIGURE 7 - HOT WATER COIL - 40 TON, 1 ROW, AT 20 GPM

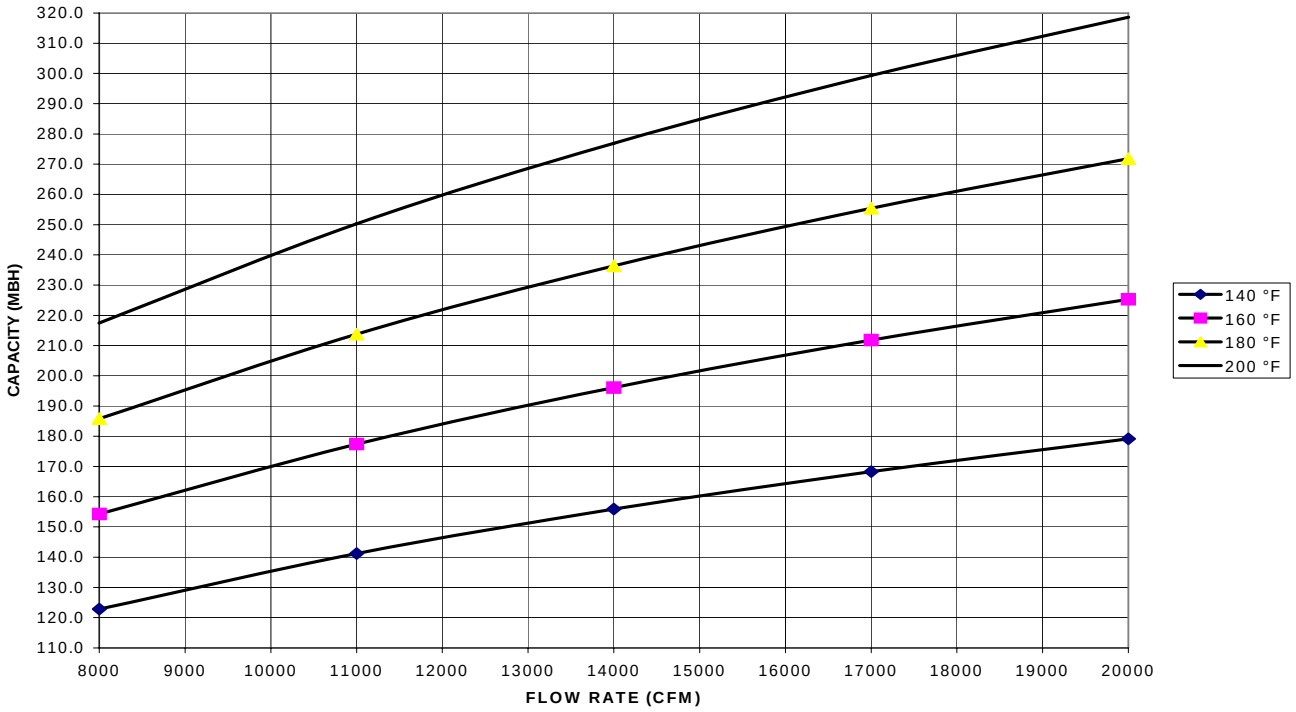


FIGURE 8 - HOT WATER COIL - 40 TON, 1 ROW, AT 30 GPM

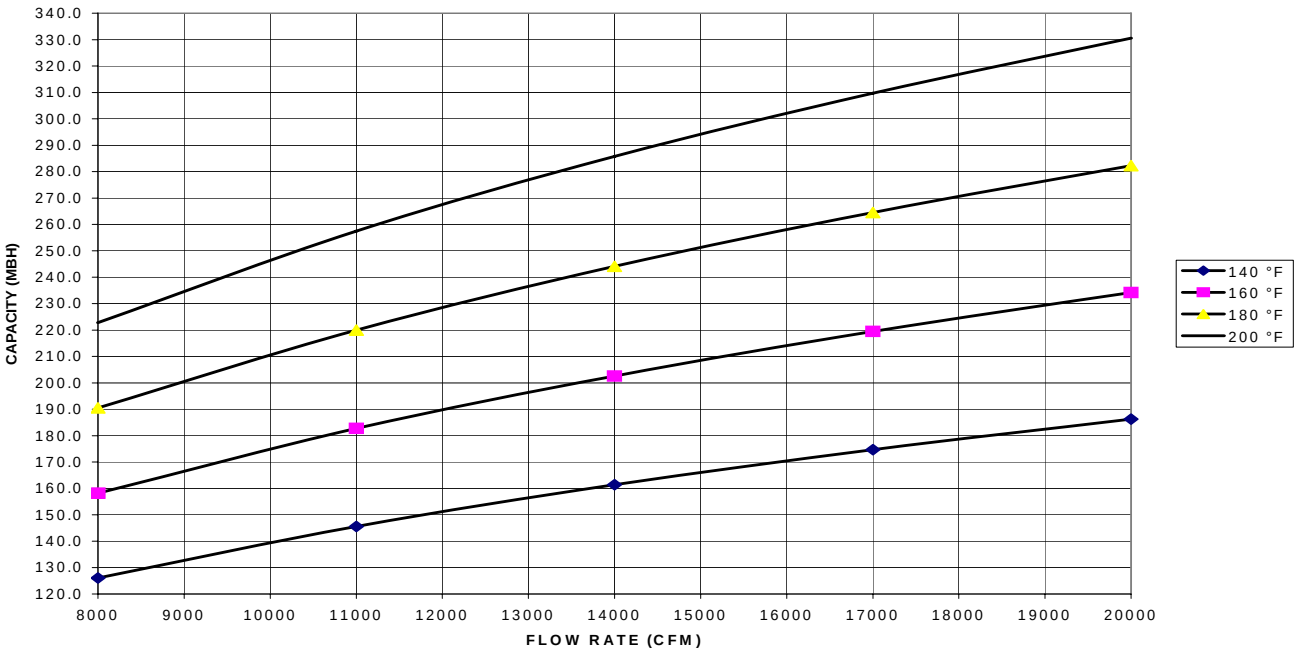


FIGURE 9 - HOT WATER COIL - 40 TON, 1 ROW, AT 40 GPM

PHYSICAL DATA HOT WATER COIL - 2 ROW

Coil Casing . . . . . Galvanized Steel

Coil Construction. . . . . Al Fin / Cu. Tube

Rows Deep 2

Fin Thickness . . . . . .006”

Tube Wall . . . . . .016”

Tubes / Circuit 2

Fins Per Inch. 8

Tubes High . . . . . 22.50”

Tube Length . . . . . .65”

Face Area . . . . . 10.16 ft.^{2}

Weight. . . . . .90 lbs

Operating Weight . . . . . .110 lbs

TABLE 14: WATER PRESSURE DROP (2 ROW, 25 & 30 TON)

GPM	20	40	60	80
WATER PRESSURE DROP	0.9	3.0	6.0	10.0

TABLE 15: STATIC RESISTANCE HOT WATER COIL (25 & 30 TON)

CFM	6000	8000	10000	15000
AIR PRESSURE DROP 1 ROW	0.07	0.11	0.16	0.32
AIR PRESSURE DROP 2 ROW	0.14	0.23	0.33	0.65

NOTE: Water pressure drop numbers are based on 60°F entering air temperature, 2.00” maximum air pressure drop across the hot water coil(s). ARI certified ratings at covering other conditions are available upon request. Hot water coils are approved for use with glycol (rates available upon request.)

TABLE 16: HOT WATER COIL (2 ROW, 25 & 30 TON)[1]

GPM	CFM	CAPACITY (MBH) AT ENTERING WATER TEMPERATURE			
		140 °F	160 °F	180 °F	200 °F
20	6000	177.5	223.8	270.4	317.3
	8000	203.8	257.2	311.1	365.5
	10000	224.8	284.1	343.9	404.2
	12000	242.2	306.4	371.1	436.4
	15000	263.6	333.8	404.6	476.1
40	6000	198.1	248.9	300.0	351.3
	8000	232.2	292.0	352.2	412.7
	10000	260.7	328.1	395.9	464.1
	12000	285.0	359.0	433.4	508.3
	15000	316.0	398.4	481.3	564.8

TABLE 16: HOT WATER COIL (2 ROW, 25 & 30 TON)[1](CONTINUED)

GPM	CFM	CAPACITY (MBH) AT ENTERING WATER TEMPERATURE			
		140 °F	160 °F	180 °F	200 °F
60	6000	206.1	258.7	311.4	364.2
	8000	243.6	305.9	368.4	431.1
	10000	275.3	345.9	416.8	488.0
	12000	302.9	380.7	458.9	537.6
	15000	338.4	425.7	513.4	601.7
80	6000	210.5	263.9	317.4	371.1
	8000	249.8	313.3	377.1	441.1
	10000	283.3	355.6	428.2	501.0
	12000	312.7	392.7	473.0	553.6
	15000	351.0	440.9	531.3	622.1

1. Based on 60°F entering air temperature, 2.00” maximum pressure drop across the hot water coil.

TABLE 17: HOT WATER COIL (2 ROWS, 40 TON)[1]

GPM	CFM	CAPACITY (MBH) AT ENTERING WATER TEMPERATURE			
		140 °F	160 °F	180 °F	200 °F
20	8000	203.8	257.2	311.1	365.5
	11000	233.9	295.7	358.1	421.0
	14000	257.0	325.3	394.2	463.8
	17000	275.5	349.0	423.3	498.3
	20000	290.9	368.7	447.4	526.9
40	8000	232.2	292.0	352.2	412.7
	11000	273.3	344.1	415.3	487.0
	14000	306.3	386.0	466.3	547.1
	17000	333.9	421.1	508.9	597.3
	20000	357.5	451.1	545.4	640.5
60	8000	243.6	305.9	368.4	431.1
	11000	289.5	363.9	438.5	513.6
	14000	327.2	411.5	496.3	581.5
	17000	359.2	452.0	545.3	639.2
	20000	386.9	487.1	587.9	689.4
80	8000	249.8	313.3	377.1	441.1
	11000	298.5	374.7	451.2	528.1
	14000	338.9	425.7	512.8	600.5
	17000	373.4	469.3	565.6	662.5
	20000	403.6	507.5	611.8	716.8

1. Based on 60°F entering air temperature, 2.00” maximum air pressure drop across the hot water coil.
ARI certified ratings at other conditions available upon request.
Hot water coils are approved for use with glycol (ratings available upon request).

TABLE 18: STATIC RESISTANCE HOT WATER COIL (40 TON)

CFM	8000	11000	14000	20000
AIR PRESSURE DROP 1 ROW	0.11	0.19	0.29	0.52
AIR PRESSURE DROP 2 ROW	0.23	0.39	0.58	1.06

TABLE 19: WATER PRESSURE DROP (2 ROW, 40 TON)

GPM	20	40	60	80
WATER PRESSURE DROP	0.9	3.0	6.0	10.0

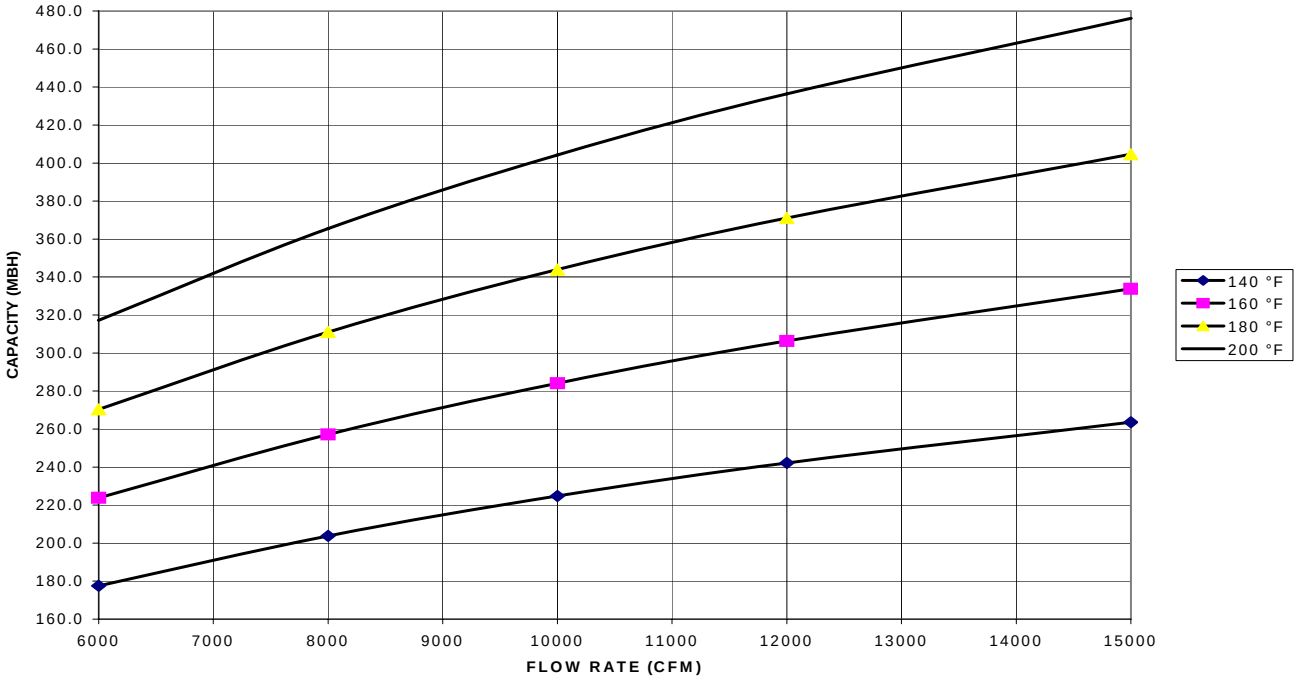


FIGURE 10 - HOT WATER COIL - 25 & 30 TON, 2 ROW, AT 20 GPM

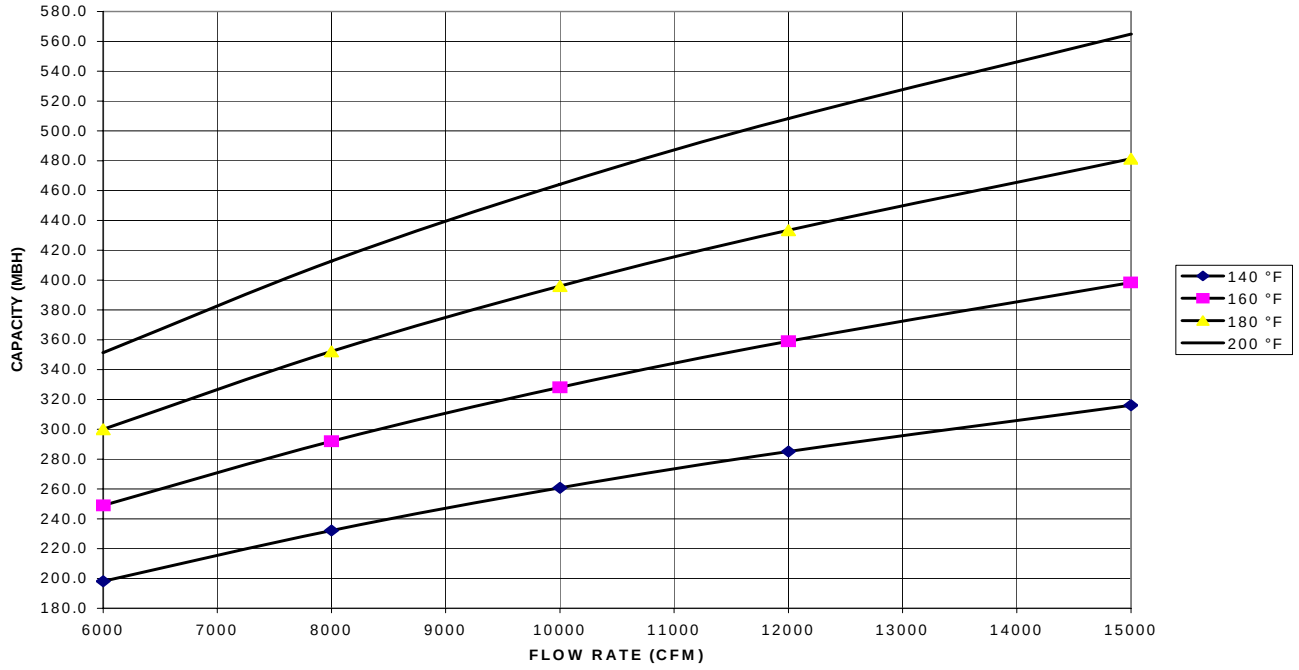


FIGURE 11 - HOT WATER COIL - 25 & 30 TON, 2 ROW, AT 40 GPM

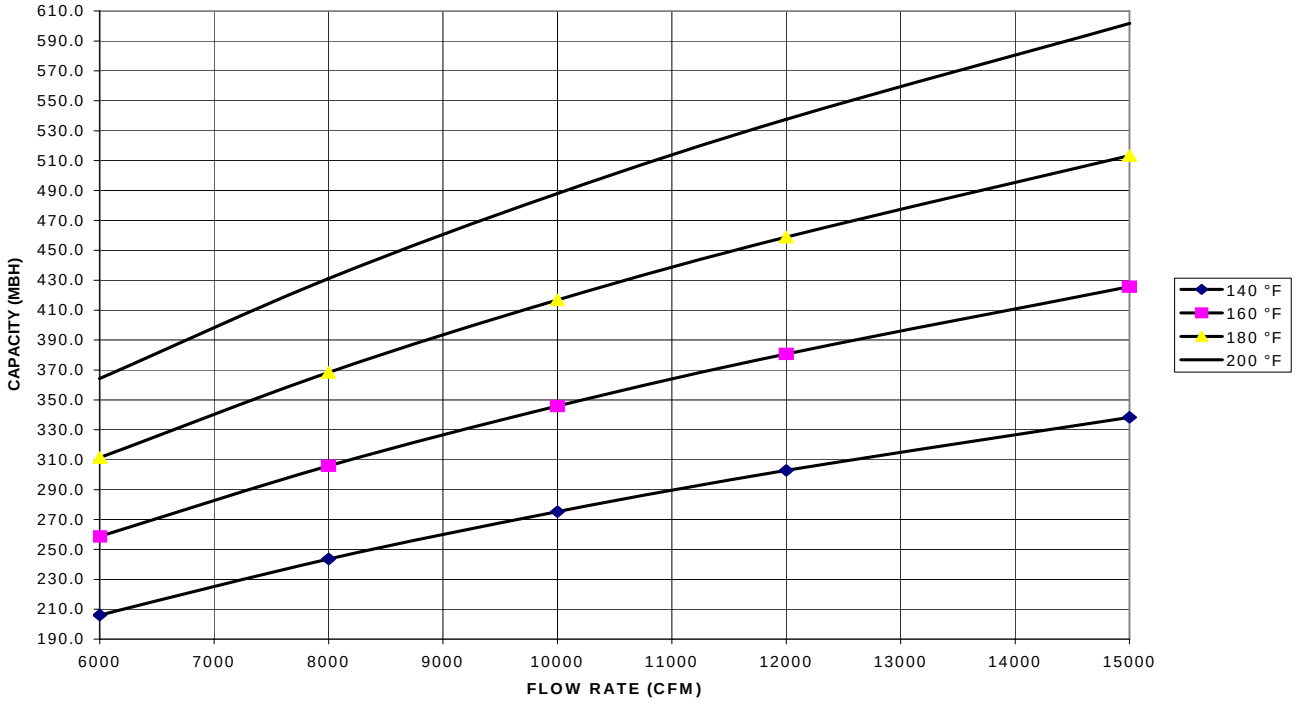


FIGURE 12 - HOT WATER COIL - 25 & 30 TON, 2 ROW, AT 60 GPM

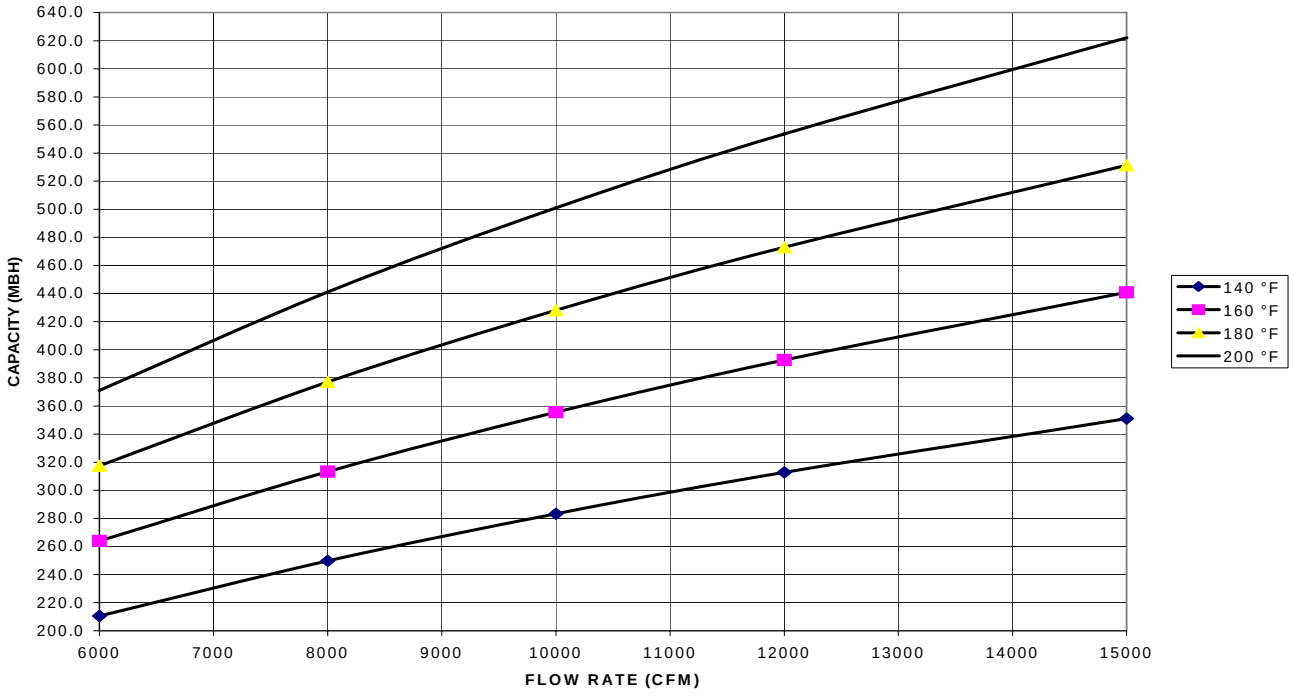


FIGURE 13 - HOT WATER COIL - 25 & 30 TON, 2 ROW, AT 80 GPM

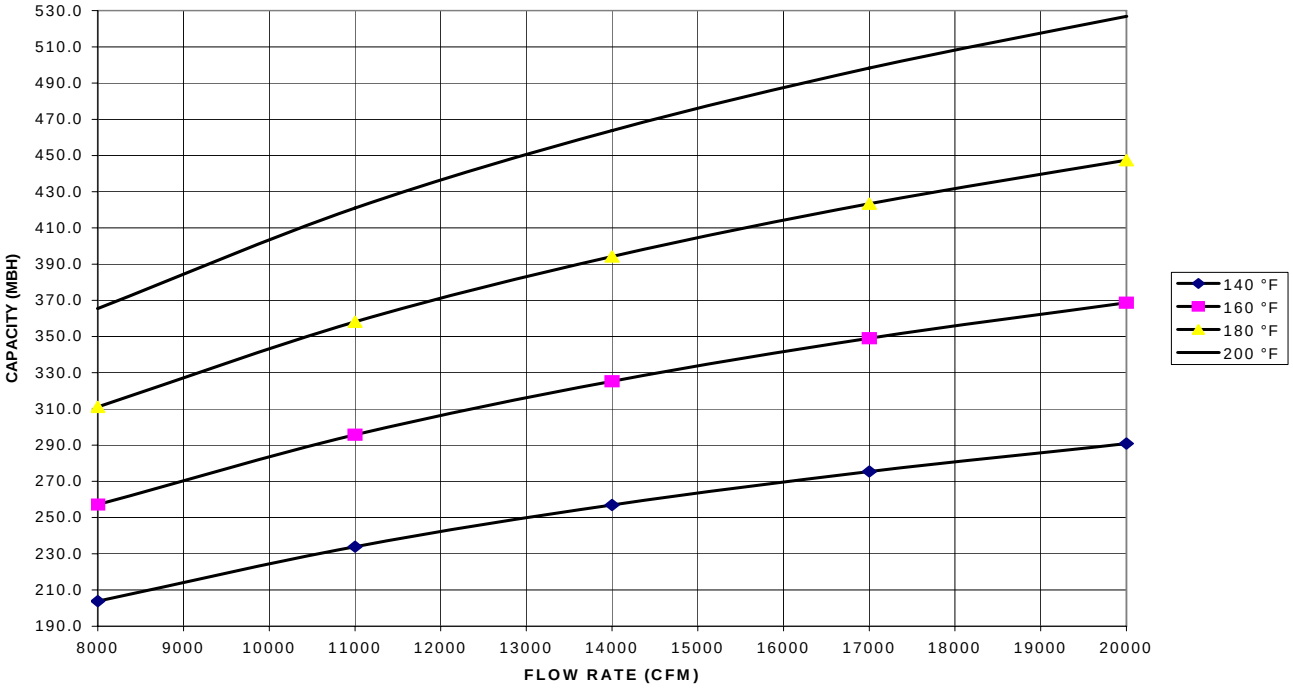


FIGURE 14 - HOT WATER COIL - 40 TON, 2 ROW, AT 20 GPM

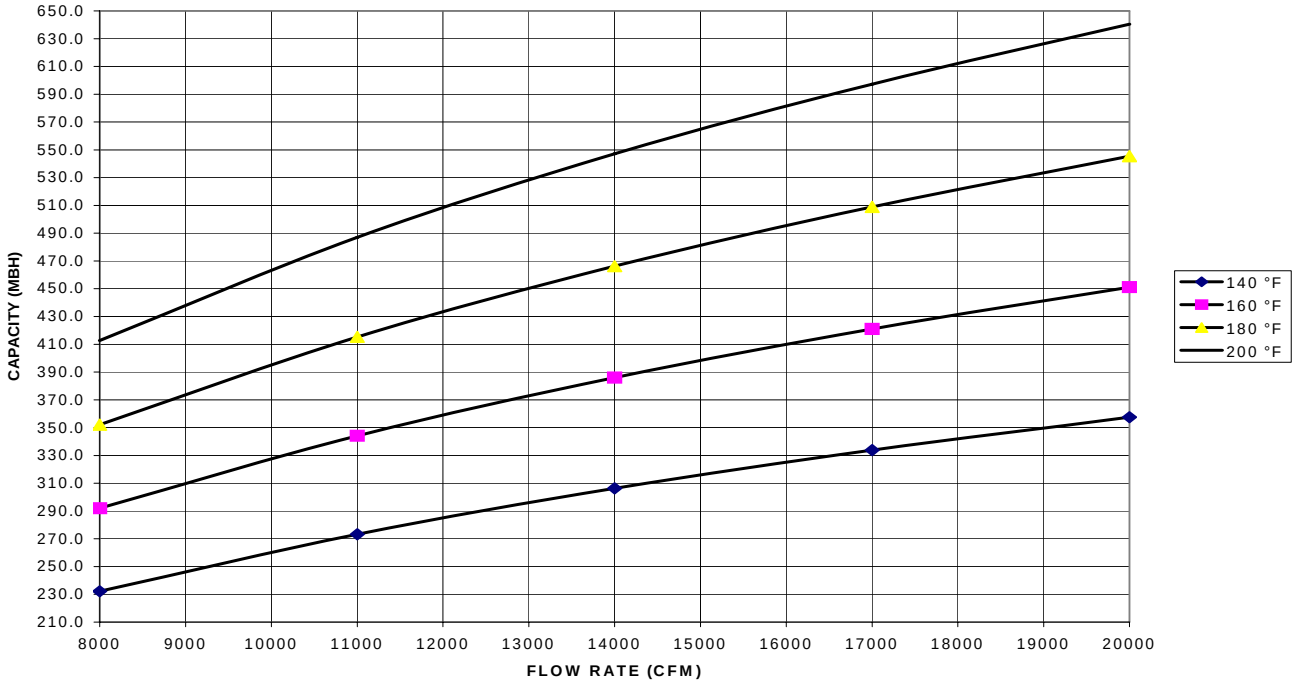


FIGURE 15 - HOT WATER COIL - 40 TON, 2 ROW, AT 40 GPM

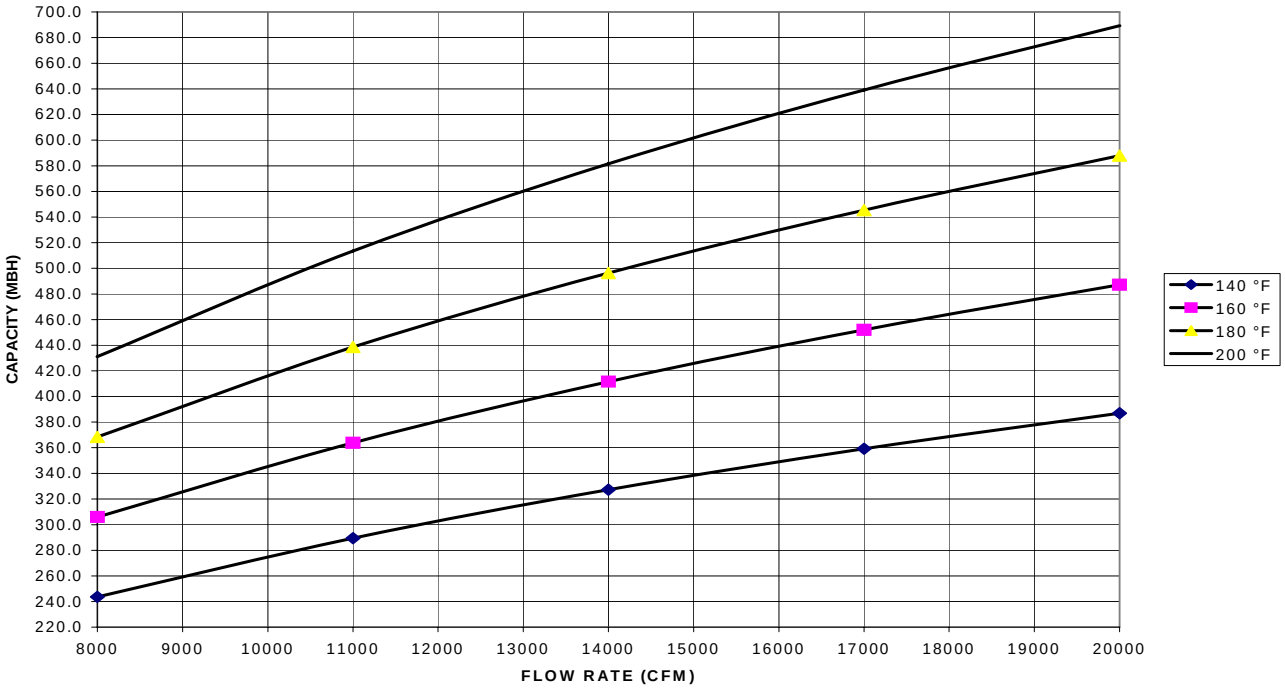


FIGURE 16 - HOT WATER COIL - 40 TON, 2 ROW, AT 60 GPM

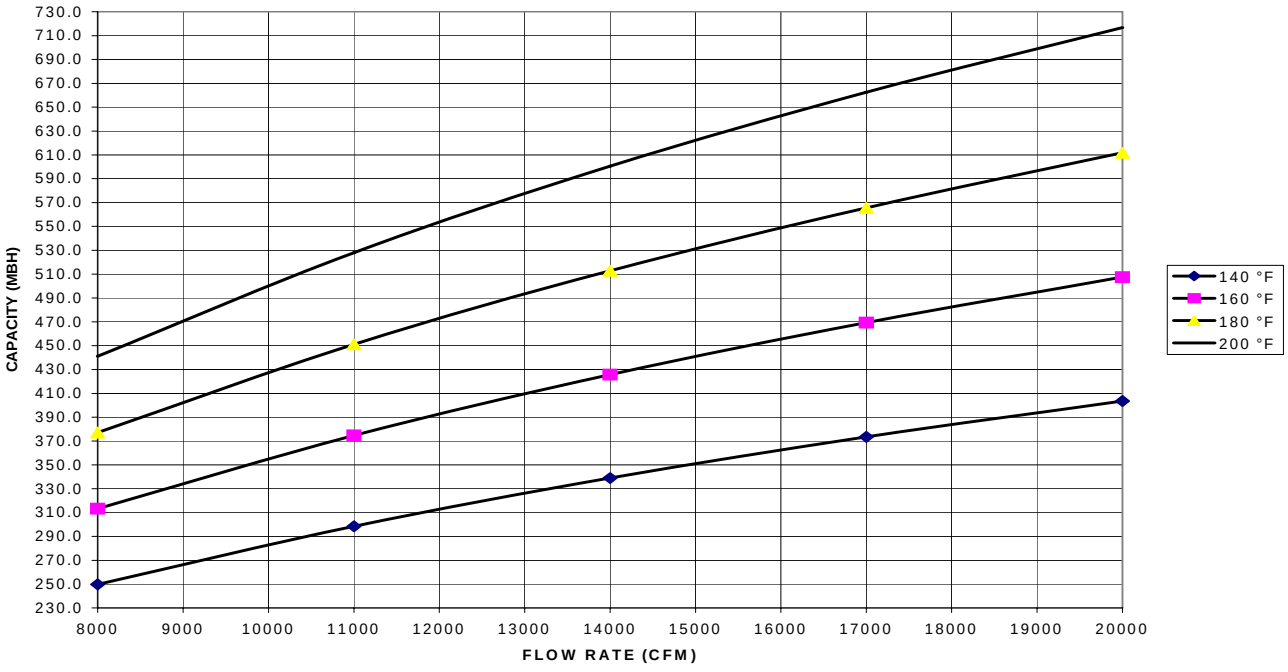


FIGURE 17 - HOT WATER COIL - 40 TON, 2 ROW, AT 80 GPM

STEAM HEATING

The YORK Millennium units (25, 30, and 40 ton sizes) can be manufactured with a steam heat coil (Bottom Supply only). YORK's one row steam coil is installed in the heating section just downstream of the supply air fan and just above the supply air opening in the bottom of the unit.

The steam control valve will not be provided. The installer will need to field supply a steam control valve. Connect the steam piping and valve power wiring at the job site for the steam heat section to be operational.

There are no provisions in the coil or control sequence to prevent freezing of condensate. The control valve, piping and field installed wiring connections are particularly vulnerable because they are installed in the vestibule outside of the conditioned air stream.

All piping, control valves, and wiring that is field installed must conform to all local and national codes

Condensate can freeze on the control valve and piping if they are not properly insulated.

PHYSICAL DATA STEAM COIL - 1 ROW

Coil Casing . . . . . Galvanized Steel
Coil Construction . . . . . Al Fin / Cu. Tube
Rows Deep 1
Fin Thickness . . . . . .010”
Tube Wall . . . . . .035”
Tubes / Circuit. 2
Fins Per Inch 6
Tubes High . . . . . 21”
Tube Length . . . . . 65”
Face Area . . . . . 9.48 ft.^{2}
Weight. . . . . 92 lbs.

*Hot water, steam coil or electric heat not available for front or rear supply.

TABLE 20: STEAM COIL (1 ROW, 25 & 30 TON)[1]

CFM	Capacity (MBH) at Steam Pressure (PSI)			
	2	6	10	15
6000	194.1	207.9	219.8	232.6
8000	221.1	236.9	250.4	265.0
10000	243.2	260.5	275.4	291.4
12000	261.9	280.6	296.6	313.9
15000	285.6	306.0	323.5	342.4

1. Based on 60°F entering air temperature, 2.00” maximum air pressure drop across the coil.

TABLE 21: STATIC RESISTANCE STEAM COIL (1 ROW, 25 & 30 TON)

CFM	6000	8000	10000	12000	15000
Air Pressure Drop	0.11	0.18	0.26	0.36	0.54

TABLE 22: STEAM COIL (1 ROW, 40 TON)

CFM	Capacity (MBH) at Steam Pressure (PSI)			
	2	6	10	15
8000	221.1	236.9	250.4	265.0
11000	252.9	271.0	286.4	303.1
14000	278.2	298.0	315.0	333.4
17000	299.4	320.7	339.0	358.8
20000	317.6	340.2	359.6	380.6

TABLE 23: STATIC RESISTANCE STEAM COIL (1 ROW, 40 TON)

CFM	8000	11000	14000	17000	20000
Air Pressure Drop	0.18	0.31	0.48	0.67	0.88

PIPING CONNECTIONS

The steam piping must enter the unit through the floor of the heat section compartment. The access doors to the compartment are gasketed to the compartment can be sealed. However, as added protection for condensate leakage into the space, the piping access holes should be sealed with a heat resistant mastic. The following figure illustrates the approximate location of the compartment and piping connections.

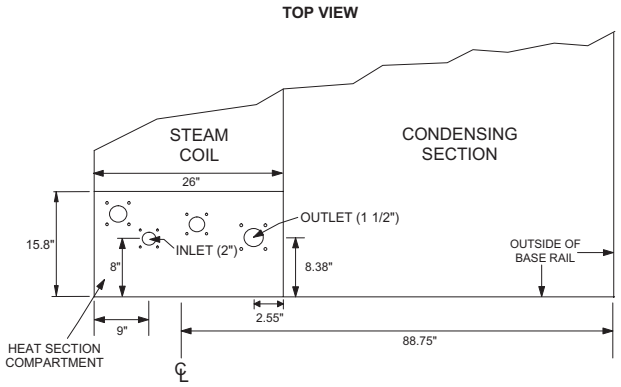


FIGURE 18 - STEAM PIPING CROSS SECTION

⚠WARNING

DO NOT use tin based solder. Brazing with tin based solder could cause equipment damage or possible injury to OCCUPANTS of the structure that is being conditioned.

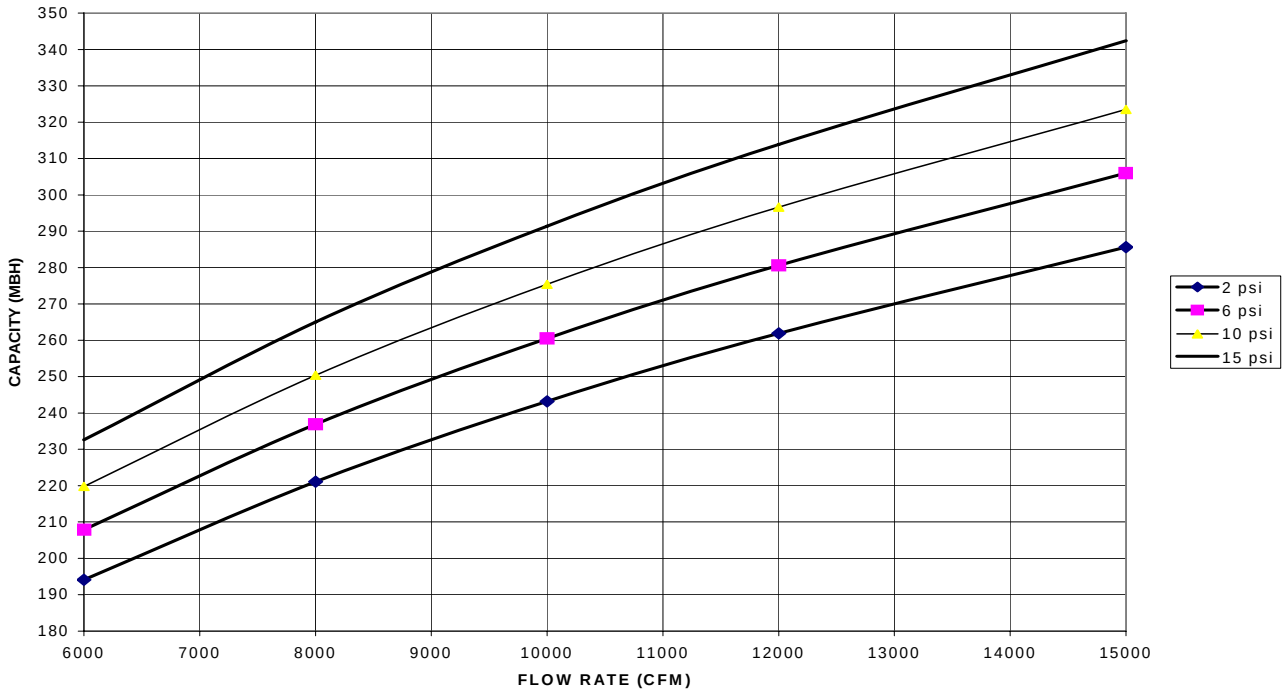


FIGURE 19 - STEAM COIL - 25 & 30 TON, 1 ROW

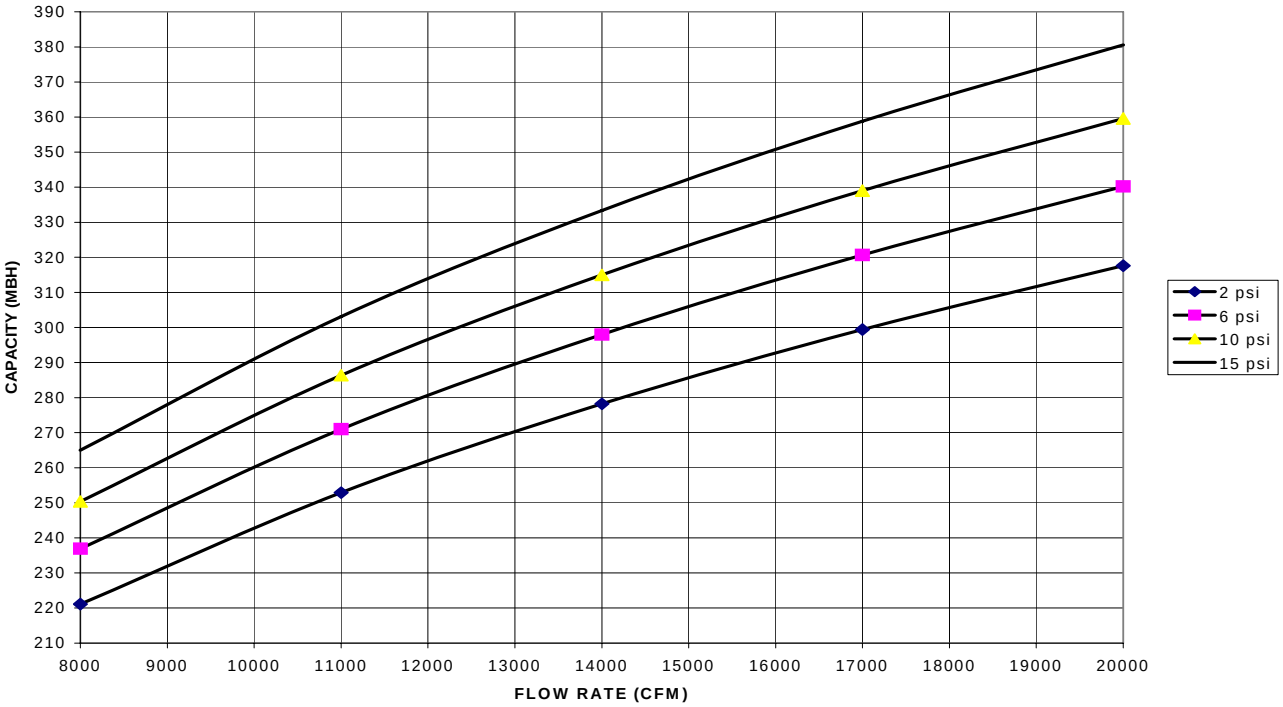


FIGURE 20 - STEAM COIL - 40 TON, 1 ROW

TABLE 24: EXHAUST FAN DRIVE DATA

Model	Blower RPM Range	Motor				Motor Pulley		Blower Pulley		Belts	
		HP	Frame Size	Motor Eff (Std. Motor)	Motor Eff (Hi Eff opt)	Pitch Dia (Inches)	Bore (Inches)	Pitch Dia (Inches)	Bore (Inches)	Designation	Qty
25 Ton	758	5	213T	87.5	89.5	4.9	1-3/8	11.3	2-3/16	BX63	2
	852	7.5	215T	88.5	91.7	5.5	1-3/8	11.3	2-3/16	BX63	2
	976	10	215T	89.5	91	6.3	1-5/8	11.3	2-3/16	BX63	2
30 Ton	852	7.5	213T	84	86.5	5.5	1-3/8	11.3	1-11/16	B65	2
	976	10	215T	86.5	89.5	6.3	1-3/8	11.3	1-11/16	B65	2
	1069	15	254T	85.7	89.5	6.9	1-3/8	11.3	1-11/16	B65	2
40 Ton	852	7.5	184T	84	86.5	5.5	1-3/8	11.3	1-11/16	B65	2
	976	10	215T	86.5	89.5	6.3	1-3/8	11.3	1-11/16	B65	2
	1069	15	254T	85.7	89.5	6.9	1-3/8	11.3	1-11/16	B65	2

TABLE 25: SUPPLY FAN MOTOR AND DRIVE DATA[1]

Model	Blower RPM Range	Motor				Motor Pulley		Blower Pulley		Belts	
		HP	Frame Size	Motor Efficiency (Std. Motor)	Motor Efficiency (Ultra Hi Eff Opt)	Pitch Dia (Inches)	Bore (Inches)	Pitch Dia (Inches)	Bore (Inches)	Designation	Qty
25 Ton	567	7.5	213T	88.5	91.7	4.5	1-3/8	13.9	2-3/16	BX56	2
	692	10	215T	89.5	91	5.5	1-3/8	13.9	2-3/16	BX56	2
	793	15	254T	91	91.7	6.3	1-5/8	13.9	2-3/16	BX56	2
	894	20	256T	91	93	7.1	1-5/8	13.9	2-3/16	BX56	2
30 Ton	617	10	215T	89.5	91	4.9	1-3/8	13.9	2-3/16	BX56	2
	743	15	254T	91	91.7	5.9	1-5/8	13.9	2-3/16	BX56	2
	856	20	256T	91	93	6.7	1-5/8	13.7	2-3/16	5VX610	2
	907	25	284T	91.7	93.6	7.1	1-7/8	13.7	2-3/16	5VX610	2
40 Ton	617	10	215T	89.5	91	4.9	1-3/8	13.9	2-7/16	BX67	2
	652	15	254T	91	91.7	5.1	1-5/8	13.7	2-7/16	5VX710	2
	728	20	256T	91	93	5.7	1-5/8	13.7	2-7/16	5VX710	2
	780	25	284T	91.7	93.6	6.1	1-7/8	13.7	2-7/16	5VX710	2

1. kW = (BHP X 0.746) / Motor Eff.
MBH = kW X 3.414
MBH = (BHP X 2.546) / Motor Eff.

NOTES: 1) Class I Blowers are limited to 15 HP motors on 25 and 30 Ton units.
2) Class I Blowers are limited to 20 HP motors on the 40 Ton units.
3) Class II Blowers are not HP limited, can use 25 HP.

SUPPLY AIR DRIVE ADJUSTMENT

At unit start-up, the measured CFM may be higher or lower than the specified CFM shown in Figures 22, 23, and 24. To achieve the specified CFM, the speed of the drive may have to be decreased or increased by changing the pitch diameter (PD) of the motor sheave as outlined below:

$$\frac{\text{Specified CFM}}{\text{Measured CFM}} \bullet \text{PD of Standard Sheave} = \text{PD of New Sheave}$$

⚠WARNING

Failure to properly adjust the total system air quantity can result in extensive blower damage.

⚠ CAUTION

Before making any blower speed changes review the installation for any installation errors, leaks or undesirable systems effects that can result in loss of air flow.

⚠ CAUTION

Even small changes in blower speed can result in substantial changes in static pressure and bhp. Bhp or amp draw of the blower motor will increase (see table) by the cube ratio of the blower speed. Static pressure will increase by the square ratio of the blower speed. Tables 26, 27 and 28 are for reference only. All blower speed changes must be made by qualified personnel with strict adherence to the fan laws.

Example:

A 30-ton unit was selected to deliver 12,000 CFM with a 20 HP motor and a 856 RPM drive, but the unit is only delivering 11,000 CFM per Figure 23.

Use the equation to determine the required PD for the new motor sheave (12,000 CFM / 11,000 CFM) x 6.7” = 7.31”.

Use the 30-ton table to select a Browning 2B5V74 which will increase the speed of the unit's drive and its supply air CFM 109%.

New drive speed = 1.091 x 856 = 933 RPM

New supply air = 1.091 x 11,000 = 12,000 CFM

Re-use the existing belts and blower sheave.

New motor BHP = (speed increase)3 x estimated motor BHP at original start-up with 11,000 CFM and 856 RPM = (1.091)3 x 11.0 BHP = 1.2986 x 11.0 BHP = 14.3 BHP
New motor amps = (speed increase)3 x measured motor amps at original start-up with 11,000 CFM and 856 RPM.

TABLE 26: 25 TON DRIVE ADJUSTMENT

7.5 HP Motor & 567 RPM Drive			10 HP Motor & 692 RPM Drive			15 HP Motor & 793 RPM Drive			20 HP Motor & 894 RPM Drive		
%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _
-	-	-	82	4.5	42	84	5.3	50	86	6.1	58
-	-	-	86	4.7	44	87	5.5	52	89	6.3	60
100	(Std.)4.5	42	89	4.9	46	90	5.7	54	91	6.5	62
104	4.7	44	93	5.1	48	94	5.9	56	94	6.7	64
109	4.9	46	96	5.3	50	97	6.1	58	97	6.9	66
113	5.1	48	100	(Std.) 5.5	52	100	(Std) 6.3	60	100	(Std.) 7.1	68
118	5.3	50	104	5.7	54	103	6.5	62	103	7.3	70
122	5.5	52	107	5.9	56	106	6.7	64	108	7.7	74
126	5.7	54	111	6.1	58	110	6.9	66	117	8.3	80
-	-	-	115	6.3	60	113	7.1	68	125	8.9	86
-	-	-	118	6.5	62	116	7.3	70	-	-	-
-	-	-	122	6.7	64	122	7.7	74	-	-	-

TABLE 27: 30 TON DRIVE ADJUSTMENT

10 HP Motor & 617 RPM Drive			15 HP Motor & 743 RPM Drive			20 HP Motor & 856 RPM Drive			25 HP Motor & 907 RPM Drive		
%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _
91.8	4.5	42	86.4	5.1	48	82.1	5.5	54	86.3	6.1	60
95.9	4.7	44	89.8	5.3	50	85.1	5.7	56	89.0	6.3	62
100.0	(Std.) 4.9	46	93.2	5.5	52	88.1	5.9	58	91.8	6.5	64
104.1	5.1	48	96.6	5.7	54	91.0	6.1	60	94.5	6.7	66
108.2	5.3	50	100.0	(Std.) 5.9	56	94.0	6.3	62	97.3	6.9	68
112.2	5.5	52	103.4	6.1	58	97.0	6.5	64	100.0	(Std.) 7.1	70
116.3	5.7	54	106.8	6.3	60	100.0	(Std.) 6.7	66	105.5	7.5	74
120.4	5.9	56	110.2	6.5	62	103.0	6.9	68	113.7	8.1	80
124.5	6.1	58	113.6	6.7	64	106.0	7.1	70	121.9	8.7	86
-	-	-	116.9	6.9	66	112.0	7.5	74	-	-	-
-	-	-	120.3	7.1	68	120.9	8.1	80	-	-	-
-	-	-	123.7	7.3	70	129.9	8.7	86	-	-	-

TABLE 28: 40 TON DRIVE ADJUSTMENT

10 HP Motor & 617 RPM Drive			15 HP Motor & 652 RPM Drive			20 HP Motor & 728 RPM Drive			25 HP Motor & 780 RPM Drive		
%RPM & CFM	Req'd PD	Browning 2B5V_ _	% RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _	%RPM & CFM	Req'd PD	Browning 2B5V_ _
91.8	4.5	42	88.2	4.5	44	82.5	4.7	46	83.7	5.1	50
95.9	4.7	44	92.1	4.7	46	86.0	4.9	48	86.9	5.3	52
100.0	(Std.) 4.9	46	96.0	4.9	48	89.5	5.1	50	90.2	5.5	54
104.1	5.1	48	100.0	(Std.) 5.1	50	93.0	5.3	52	93.4	5.7	56
108.2	5.3	50	103.9	5.3	52	96.5	5.5	54	96.7	5.9	58
112.2	5.5	52	107.8	5.5	54	100.0	(Std.) 5.7	56	100.0	(Std.) 6.1	60
116.3	5.7	54	111.7	5.7	56	103.5	5.9	58	103.3	6.3	62
-	-	-	115.6	5.9	58	107.0	6.1	60	106.6	6.5	64
-	-	-	119.5	6.1	60	110.5	6.3	62	109.8	6.7	66
-	-	-	123.4	6.3	62	114.0	6.5	64	113.1	6.9	68
-	-	-	127.4	6.5	64	117.5	6.7	66	116.4	7.1	70
-	-	-	-	-	66	121.1	6.9	68	119.7	7.5	74

NOTES: 1) Class I Blowers are limited to 15 HP motors on 25 and 30 Ton units.
2) Class I Blowers are limited to 20 HP motors on the 40 Ton units.
3) Class II Blowers are not HP limited, can use 25 HP.

TABLE 29: DRIVE ADJUSTMENT FOR POWER EXHAUST - 25 TON

5 HP MOTOR & 759 RPM DRIVE			7.5 HP MOTOR & 852 RPM DRIVE			10 HP MOTOR & 975 RPM DRIVE		
%RPM & CFM	REQ'D PD	BROWNING 2B5V_ _	%RPM & CFM	REQ'D PD	BROWNING 2B5V_ _	%RPM & CFM	REQ'D PD	BROWNING 2B5V_ _
100	(Std.) 4.9	46	92	5.1	48	93	5.9	56
104	5.1	48	96	5.3	50	97	6.1	58
109	5.3	50	100	(Std.) 5.5	52	100	(Std.) 6.3	60
113	5.5	52	104	5.7	54	103	6.5	62
117	5.7	54	108	5.9	56	107	6.7	64
122	5.9	56	112	6.1	58	110	6.9	66

TABLE 30: DRIVE ADJUSTMENT FOR POWER EXHAUST - 30 & 40 TON

7.5 HP MOTOR & 852 RPM DRIVE			10 HP MOTOR & 976 RPM DRIVE			15 HP MOTOR & 1069 RPM DRIVE		
% RPM & CFM	REQ'D PD (IN)	BROWNING 2B5V_ _	% RPM & CFM	REQ'D PD (IN)	BROWNING 2B5V_ _	% RPM & CFM	REQ'D PD (IN)	BROWNING 2B5V_ _
96.4	5.3	52	93.7	5.9	58	94.2	6.5	64
100.0	(Std.) 5.5	54	96.8	6.1	60	97.1	6.7	66
103.6	5.7	56	100.0	(Std.) 6.3	62	100.0	(Std.) 6.9	68
107.3	5.9	58	103.2	6.5	64	102.9	7.1	70
110.9	6.1	60	106.3	6.7	66	108.7	7.5	74
114.5	6.3	62	109.5	6.9	68	117.4	8.1	80

TABLE 31: COOLING PERFORMANCE 25 TON

Air on Evaporator Coil		Temperature of Air on Condenser Coil																		
		75°F									85°F									
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
7500	72	337.7	23.0	179	165	152	138	124	-	-	326.9	24.5	175	161	147	133	119	-	-
	67	310.2	21.6	223	209	195	181	168	154	140	296.8	23.9	217	203	189	175	161	147	134
	62	271.9	21.5	254	240	226	212	198	184	170	269.6	23.5	257	243	229	215	201	187	174
	57	243.9	20.8	243	247	246	233	219	205	191	253.3	23.1	253	253	246	232	218	204	190
8750	72	344.1	23.7	194	177	159	141	124	-	-	331.9	25.2	186	170	154	138	122	-	-
	67	316.1	22.2	240	222	205	187	170	152	134	301.4	24.5	230	214	198	182	165	149	133
	62	277.1	22.1	268	255	237	220	202	184	167	273.7	24.1	267	256	240	223	207	191	175
	57	248.7	21.4	248	250	259	241	223	206	188	257.2	23.7	257	257	257	241	224	208	192
10000	72	350.5	24.3	209	188	166	145	124	-	-	336.8	25.8	198	179	161	142	124	-	-
	67	321.9	22.8	257	236	214	193	172	150	129	305.9	25.1	244	225	206	188	169	151	132
	62	282.3	22.7	282	270	248	227	206	184	163	277.9	24.7	277	269	250	232	213	194	176
	57	253.4	21.9	253	253	271	249	228	207	185	261.0	24.3	261	261	268	249	231	212	194
11250	72	355.5	26.5	218	197	177	156	136	-	-	341.2	27.7	209	190	171	152	133	-	-
	67	326.5	24.9	269	249	228	208	187	167	146	309.8	27.0	258	239	220	201	182	163	144
	62	286.3	24.7	286	280	267	247	226	206	185	281.4	26.6	281	277	266	247	228	210	191
	57	257.1	23.9	257	257	265	245	224	204	183	264.4	26.1	264	264	268	249	230	211	192
12500	72	360.5	28.7	227	207	187	168	148	-	-	345.5	29.7	221	201	182	162	143	-	-
	67	331.1	26.9	281	261	242	222	202	183	163	313.8	28.9	272	253	233	214	195	175	156
	62	290.4	26.8	290	290	286	267	247	227	208	285.0	28.4	285	285	283	263	244	225	205
	57	260.8	25.9	260	260	260	241	221	201	182	267.7	28.0	267	267	267	248	228	209	190
		95°F									105°F									
7500	72	316.1	26.1	171	157	143	129	115	-	-	297.4	29.4	162	149	135	121	107	-	-
	67	283.5	26.2	211	197	183	169	155	141	127	268.6	29.0	204	190	176	163	149	135	121
	62	267.4	25.5	260	246	232	219	205	191	177	251.6	28.5	248	239	226	212	198	184	170
	57	262.7	25.4	262	259	245	231	217	203	189	242.6	28.3	242	240	232	218	204	190	176
8750	72	319.6	26.6	179	164	149	134	119	-	-	301.6	29.9	170	155	141	126	111	-	-
	67	286.7	26.8	221	206	191	176	161	146	131	272.4	29.5	214	199	184	170	155	140	125
	62	270.4	26.1	267	257	242	227	212	198	183	255.1	28.9	253	248	236	221	206	191	177
	57	265.7	26.0	265	263	255	240	225	210	196	246.0	28.8	246	245	242	227	212	198	183
10000	72	323.2	27.2	187	171	155	139	124	-	-	305.7	30.3	178	162	147	131	115	-	-
	67	289.8	27.4	230	214	199	183	167	151	136	276.1	30.0	223	208	192	177	161	145	130
	62	273.4	26.7	273	268	252	236	220	205	189	258.6	29.4	258	256	246	230	214	199	183
	57	268.6	26.6	268	268	265	250	234	218	202	249.4	29.2	249	249	252	237	221	205	190
11250	72	326.8	29.0	200	183	166	148	131	-	-	309.0	32.2	191	174	157	139	122	-	-
	67	293.1	29.1	247	229	212	194	177	160	142	279.0	31.8	240	223	205	188	171	153	136
	62	276.5	28.4	276	273	266	248	231	213	196	261.4	31.2	261	260	255	237	220	203	185
	57	271.7	28.3	271	271	270	252	235	217	200	252.0	31.0	252	252	253	236	219	201	184
12500	72	330.5	30.7	214	195	176	157	138	-	-	312.2	34.0	205	186	167	148	129	-	-
	67	296.4	30.9	264	244	225	206	187	168	149	282.0	33.6	256	237	218	199	180	161	142
	62	279.6	30.1	279	279	279	260	241	222	203	264.1	32.9	264	264	264	245	226	207	188
	57	274.7	30.0	274	274	274	255	236	217	198	254.7	32.8	254	254	254	235	216	197	178
		115°F									125°F									
7500	72	278.8	32.7	154	140	126	113	99.	-	-	260.1	36.1	145	132	118	104	91.	-	-
	67	253.7	31.9	197	183	170	156	142	129	115	238.8	34.7	190	177	163	149	136	122	109
	62	235.8	31.4	235	232	219	205	191	178	164	220.0	34.4	220	220	212	198	185	171	157
	57	222.5	31.2	222	222	219	205	191	177	164	202.4	34.0	202	202	202	192	178	165	151
8750	72	283.5	33.1	162	147	132	118	103	-	-	265.5	36.3	153	138	124	109	95.	-	-
	67	258.0	32.2	207	192	178	163	149	134	119	243.7	34.9	200	186	171	157	142	128	113
	62	239.8	31.7	239	238	229	214	200	185	171	224.5	34.6	224	224	223	208	194	179	165
	57	226.3	31.5	226	226	229	214	200	185	170	206.6	34.3	206	206	206	201	187	172	158
10000	72	288.3	33.4	169	154	138	123	107	-	-	270.8	36.5	161	145	130	115	99.	-	-
	67	262.4	32.6	217	201	186	170	155	139	124	248.6	35.1	210	195	179	164	149	133	118
	62	243.9	32.1	243	243	239	224	208	193	178	229.1	34.8	229	229	229	218	202	187	172
	57	230.1	31.8	230	230	239	224	208	193	177	210.8	34.5	210	210	210	210	196	180	165
11250	72	291.1	35.4	182	165	148	131	113	-	-	273.3	38.6	173	156	139	122	105	-	-
	67	265.0	34.4	233	216	199	181	164	147	130	250.9	37.1	226	209	192	175	158	141	124
	62	246.2	34.0	246	246	244	227	209	192	175	231.1	36.7	231	231	231	216	199	182	165
	57	232.3	33.7	232	232	237	220	202	185	168	212.7	36.4	212	212	212	203	186	169	152
12500	72	293.9	37.3	195	176	157	138	119	-	-	275.7	40.6	185	167	148	129	110	-	-
	67	267.5	36.3	249	230	211	192	173	155	136	253.1	39.1	242	223	204	185	167	148	129
	62	248.6	35.8	248	248	248	229	210	191	173	233.1	38.7	233	233	233	214	195	176	158
	57	234.6	35.6	234	234	234	215	196	177	159	214.5	38.3	214	214	214	195	177	158	139

1. The capacities are gross ratings. For net capacity, deduct the supply air blower motor heat *MBh = 3.415 x kW). Refer to the appropriate Blower Performance table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors and the compressor motors but not the supply air blower motor.

TABLE 32: COOLING PERFORMANCE 30 TON STANDARD CAPACITY COIL

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		75°F									85°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
6000	72	385	27.8	223	203	183	163	142	-	-	370	30.6	217	197	177	157	136	-	-
	67	353	27.3	259	240	220	200	179	159	141	341	30.0	254	234	214	194	174	153	133
	62	330	26.6	295	275	254	235	215	195	175	316	29.4	289	269	249	229	209	189	169
	57	316	26.1	316	307	287	269	249	229	209	306	28.9	306	298	283	263	243	223	203
7000	72	398	28.0	240	216	193	169	145	-	-	382	30.9	234	210	187	163	139	-	-
	67	366	27.2	281	258	238	212	191	164	143	353	30.2	276	253	230	206	183	159	135
	62	342	26.9	321	300	279	256	230	206	183	329	29.7	318	294	271	248	224	201	177
	57	339	26.8	339	327	318	293	270	246	226	326	29.4	326	316	307	288	264	241	218
8000	72	405	28.3	256	229	202	175	147	-	-	391	31.1	250	223	196	169	141	-	-
	67	375	27.5	304	277	250	223	196	169	141	362	30.4	298	271	245	218	191	164	136
	62	354	27.1	354	327	297	270	247	217	190	342	29.9	342	319	292	265	239	212	185
	57	353	27.3	353	344	334	322	290	263	239	342	29.7	342	332	322	312	285	258	232
9000	72	415	28.5	272	241	211	183	149	-	-	398	31.2	266	236	205	175	143	-	-
	67	385	27.6	325	298	265	238	205	177	146	371	30.6	320	290	260	230	199	169	138
	62	369	27.3	369	344	317	291	258	231	200	356	30.1	356	341	312	283	253	223	193
	57	368	27.5	368	355	348	336	311	280	253	356	30.0	356	345	335	324	304	275	245
10000	72	420	28.7	284	254	220	186	152	-	-	404	31.4	281	248	214	180	146	-	-
	67	393	27.7	341	313	283	246	213	179	147	378	30.7	339	308	275	241	207	173	139
	62	379	27.5	379	369	334	307	275	241	208	368	30.2	368	357	331	300	267	234	200
	57	379	27.1	379	371	358	348	326	297	265	367	30.2	367	357	346	335	321	290	258
11000	72	424	28.8	303	266	229	192	154	-	-	408	31.5	297	260	223	186	148	-	-
	67	399	27.9	363	329	294	261	224	183	145	383	30.8	358	324	289	253	216	178	140
	62	391	27.5	391	381	346	321	286	251	215	378	30.3	378	367	348	315	280	244	207
	57	391	27.4	391	377	366	356	348	312	276	378	30.4	378	366	355	344	333	304	269
12000	72	430	28.6	317	277	238	197	156	-	-	412	31.5	311	273	232	192	150	-	-
	67	406	28.0	388	344	308	267	229	191	146	388	30.9	377	339	302	263	223	183	141
	62	399	27.6	399	388	377	338	298	260	221	387	30.6	387	375	364	329	291	253	214
	57	402	27.6	402	388	376	365	351	329	286	387	30.6	387	375	363	352	340	317	280
13000	72	436	29.0	329	287	245	203	161	-	-	416	31.6	324	283	241	197	153	-	-
	67	401	28.1	398	361	324	277	236	192	147	393	31.0	392	354	314	272	231	187	142
	62	410	27.5	410	398	383	350	306	268	227	395	30.7	395	383	371	342	302	261	220
	57	409	27.5	409	397	386	374	360	328	299	395	30.7	395	383	371	359	347	329	291
14000	72	436	29.0	338	297	252	209	160	-	-	419	31.7	337	293	249	203	155	-	-
	67	419	28.2	419	372	333	289	242	200	148	403	31.1	403	368	326	281	237	192	143
	62	416	27.9	416	404	389	366	323	276	235	402	30.9	402	390	377	355	314	269	226
	57	418	27.9	418	403	391	380	368	354	308	402	30.9	402	389	377	365	353	341	300
15000	72	439	28.8	356	306	259	213	163	-	-	422	31.7	350	302	256	209	157	-	-
	67	425	28.2	425	398	344	295	248	201	153	409	31.2	409	383	337	290	243	196	145
	62	421	27.8	421	412	397	370	333	283	240	408	31.0	408	396	383	366	324	277	231
	57	424	27.8	424	409	399	385	373	361	317	408	31.0	408	395	383	370	358	346	310

TABLE 32: COOLING PERFORMANCE 30 TON STANDARD CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		95°F									105°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
6000	72	355	34.0	211	191	171	151	130	-	-	340	38.0	205	185	165	145	124	-	-
	67	328	33.3	248	228	208	188	168	147	126	314	37.2	241	222	202	182	161	141	120
	62	303	32.7	283	263	243	223	203	183	163	291	36.5	277	257	236	217	197	177	157
	57	296	32.2	296	288	277	257	237	217	197	286	36.0	286	277	269	251	231	211	191
7000	72	366	34.3	228	204	181	157	133	-	-	350	38.2	222	198	175	151	127	-	-
	67	339	33.6	270	247	223	200	176	153	128	324	37.4	263	240	217	194	170	146	122
	62	316	33.0	312	288	264	241	218	195	171	303	36.8	303	282	258	235	212	188	165
	57	314	32.6	314	305	296	282	258	235	211	303	36.4	303	294	285	275	252	228	205
8000	72	375	34.5	244	217	190	163	135	-	-	357	38.5	238	211	184	157	129	-	-
	67	348	33.8	292	265	239	212	185	158	130	333	37.7	286	259	232	205	178	151	123
	62	330	33.2	330	312	286	259	232	206	179	318	37.0	318	306	279	252	226	199	172
	57	330	32.9	330	320	310	301	279	252	225	317	36.9	317	308	298	289	272	245	218
9000	72	381	34.6	260	230	199	168	137	-	-	364	38.7	254	223	193	162	131	-	-
	67	356	34.0	314	283	254	223	193	162	131	340	37.8	307	277	247	217	187	156	125
	62	343	33.4	343	333	306	276	247	216	186	330	37.2	330	320	299	270	240	210	179
	57	343	33.2	343	333	322	312	297	269	238	329	37.1	329	319	309	300	290	262	232
10000	72	387	34.8	276	242	208	174	140	-	-	369	38.9	269	236	202	168	134	-	-
	67	362	34.1	334	302	268	235	201	167	132	345	37.9	326	295	262	228	195	161	126
	62	355	33.5	355	344	325	293	260	227	193	340	37.4	340	330	316	286	254	220	187
	57	354	33.6	354	343	333	322	312	283	251	340	37.3	340	329	319	309	299	276	244
11000	72	391	34.9	291	254	217	180	142	-	-	373	39.0	285	248	211	174	136	-	-
	67	367	34.2	352	318	283	246	209	172	134	351	38.1	345	311	276	240	203	165	127
	62	364	33.7	364	353	342	308	273	237	200	349	37.7	349	339	328	300	265	230	194
	57	364	33.8	364	353	342	331	319	296	262	349	37.6	349	338	327	317	306	288	255
12000	72	394	35.0	305	267	226	186	144	-	-	376	39.1	299	259	220	179	138	-	-
	67	372	34.3	367	333	295	257	217	176	135	358	38.2	358	326	287	249	211	170	128
	62	373	34.0	373	361	350	321	284	246	207	357	37.8	357	346	335	314	277	239	200
	57	372	34.0	372	361	349	338	327	308	273	357	37.8	357	346	334	323	312	302	265
13000	72	397	35.0	318	277	235	191	146	-	-	379	39.2	311	269	227	185	140	-	-
	67	381	34.4	381	347	306	266	225	181	136	365	38.3	365	340	300	259	218	174	129
	62	380	34.2	380	368	357	334	296	254	213	365	38.0	365	353	341	326	288	247	206
	57	380	34.2	380	368	356	344	333	322	283	364	38.0	364	352	341	329	318	307	275
14000	72	401	35.1	332	287	243	197	149	-	-	382	39.2	323	279	234	191	142	-	-
	67	387	34.5	387	361	319	274	231	185	137	371	38.4	371	351	312	268	224	179	130
	62	387	34.3	387	375	363	345	306	262	218	371	38.1	371	359	347	336	299	255	211
	57	386	34.3	386	374	362	350	338	327	292	370	38.1	370	358	346	335	323	312	284
15000	72	404	35.2	343	296	250	203	151	-	-	385	39.3	335	288	241	195	145	-	-
	67	393	34.6	393	372	330	284	237	190	138	377	38.4	377	365	323	277	230	183	132
	62	393	34.5	393	380	368	356	316	270	223	376	38.3	376	364	352	340	309	262	216
	57	392	34.5	392	380	367	355	343	331	302	376	38.3	376	364	351	340	328	316	293

TABLE 32: COOLING PERFORMANCE 30 TON STANDARD CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		115°F									125°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
6000	72	324	42.5	199	179	159	138	118	-	-	307	47.5	193	173	153	130	112	-	-
	67	299	41.7	235	215	195	175	155	135	114	283	46.8	230	207	187	167	150	129	108
	62	277	40.7	270	250	230	210	190	170	150	261	45.3	262	242	225	202	182	162	142
	57	275	40.3	275	266	258	244	224	204	184	263	45.1	263	255	244	236	216	196	176
7000	72	333	42.8	215	192	168	144	120	-	-	315	48.1	207	186	160	136	112	-	-
	67	309	41.8	257	234	211	187	164	140	115	294	46.8	252	229	205	179	158	135	107
	62	291	41.0	291	275	252	228	205	182	158	280	45.6	276	267	246	220	197	177	150
	57	291	40.8	291	282	273	265	245	221	198	278	45.8	278	269	260	252	237	214	190
8000	72	340	42.8	231	205	178	150	123	-	-	324	47.4	223	199	172	142	117	-	-
	67	317	42.0	279	252	226	199	172	145	117	300	46.7	271	244	221	194	167	140	112
	62	305	41.3	305	296	273	246	219	192	165	291	46.1	291	282	268	241	211	185	158
	57	305	41.2	305	295	286	276	264	239	212	294	45.8	294	281	274	262	255	234	207
9000	72	345	43.0	247	217	187	156	125	-	-	324	47.5	239	212	181	150	119	-	-
	67	323	42.2	300	271	240	210	180	149	118	305	47.2	293	265	233	202	172	141	110
	62	317	41.5	317	307	292	262	233	203	173	304	46.3	304	294	285	252	226	195	168
	57	316	41.6	316	306	296	287	277	254	225	304	46.7	304	294	283	273	258	245	217
10000	72	350	43.2	263	230	196	162	127	-	-	330	47.7	258	224	190	156	119	-	-
	67	329	42.3	320	289	255	222	188	154	119	314	47.3	316	284	247	217	180	146	111
	62	326	41.9	326	316	306	277	245	213	180	313	47.0	313	302	295	266	233	206	172
	57	326	41.9	326	315	305	295	285	267	235	312	47.4	312	301	291	280	270	256	224
11000	72	353	43.5	278	242	205	168	130	-	-	331	48.4	270	236	199	162	124	-	-
	67	335	42.5	335	304	269	233	196	159	120	319	47.4	322	297	262	225	188	154	113
	62	334	42.2	334	324	314	291	257	223	186	319	47.2	319	308	300	281	249	216	176
	57	334	42.0	334	323	313	303	292	282	247	319	47.0	319	308	300	289	277	278	238
12000	72	357	43.6	292	252	214	173	132	-	-	337	48.5	284	246	208	168	126	-	-
	67	343	42.6	343	318	281	241	204	163	122	327	47.5	322	309	277	233	196	155	117
	62	342	42.2	342	331	320	304	268	231	191	328	47.2	328	316	305	291	257	222	180
	57	341	42.2	341	330	319	309	298	288	256	324	47.2	324	313	304	296	285	266	246
13000	72	361	43.7	305	264	221	179	134	-	-	343	48.5	300	262	217	173	128	-	-
	67	349	42.9	349	332	291	250	210	168	122	333	48.2	333	323	279	239	201	163	115
	62	348	42.4	348	337	326	315	278	239	197	329	47.4	329	320	312	301	266	230	186
	57	348	42.4	348	336	325	314	304	293	267	332	47.4	332	320	308	299	291	280	259
14000	72	364	43.8	317	274	228	184	136	-	-	347	48.9	314	272	225	176	131	-	-
	67	354	43.0	354	343	302	261	215	172	123	336	48.3	336	337	289	253	204	164	116
	62	354	42.6	354	342	331	320	288	247	203	336	47.8	336	324	315	297	273	238	194
	57	353	42.6	353	342	330	319	308	297	276	335	47.8	335	326	314	302	293	282	268
15000	72	366	43.8	329	283	234	188	139	-	-	347	48.7	325	281	229	182	133	-	-
	67	359	43.1	359	348	313	268	221	176	124	339	48.7	339	321	300	257	210	169	114
	62	359	42.7	359	347	335	324	300	255	208	342	47.7	342	329	317	308	289	249	199
	57	359	42.7	359	347	335	323	312	301	283	341	47.7	341	329	319	304	295	286	272

1. The capacities are gross ratings. For net capacity, deduct the supply air blower motor heat *MBh = 3.415 x kW). Refer to the appropriate Blower Performance table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors and the compressor motors but not the supply air blower motor.

TABLE 33: COOLING PERFORMANCE 30 TON HIGH CAPACITY COIL

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		75°F									85°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
6000	72	401	27.9	232	212	192	168	151	-	-	385	31.0	224	204	184	163	143	-	-
	67	367	27.3	268	248	225	205	185	165	147	354	30.4	260	240	220	200	180	160	140
	62	338	27.1	302	283	263	240	223	203	183	327	29.8	295	275	255	235	216	196	176
	57	321	26.5	321	312	292	277	254	234	217	312	29.2	312	303	288	269	249	229	210
7000	72	412	28.2	245	225	198	177	153	-	-	397	31.3	240	217	193	170	146	-	-
	67	382	27.4	287	267	244	220	194	173	149	367	30.6	282	259	236	213	189	166	142
	62	352	26.9	327	304	285	261	238	215	189	340	30.0	323	300	277	254	231	208	184
	57	345	26.8	345	333	324	298	278	252	229	333	29.5	333	323	314	293	271	247	224
8000	72	423	28.5	261	234	210	180	156	-	-	407	31.5	256	229	203	175	148	-	-
	67	394	28.0	309	285	256	232	205	178	147	378	30.9	304	278	251	225	198	171	143
	62	364	27.4	364	330	306	279	253	226	199	351	30.3	351	325	299	272	246	219	192
	57	361	27.2	361	351	342	326	298	272	245	350	29.8	350	340	330	318	292	265	238
9000	72	432	28.7	280	250	220	186	155	-	-	415	31.7	272	242	212	181	150	-	-
	67	404	27.7	334	301	271	241	213	183	152	387	31.0	327	296	266	236	206	176	145
	62	380	27.3	380	355	327	297	267	237	206	366	30.4	366	350	320	290	260	230	200
	57	377	27.1	377	367	356	347	319	289	258	365	30.1	365	354	344	333	312	282	252
10000	72	440	28.8	296	259	229	195	157	-	-	421	31.8	288	254	221	187	152	-	-
	67	410	28.0	356	322	288	255	221	187	153	393	31.1	348	315	281	248	214	180	146
	62	389	27.7	389	378	348	314	281	247	214	378	30.6	378	367	341	307	274	240	207
	57	391	27.4	391	381	370	359	340	308	272	378	30.4	378	367	356	345	332	299	265
11000	72	445	28.9	312	275	238	197	162	-	-	426	32.0	304	267	230	192	155	-	-
	67	416	28.2	378	340	303	266	229	192	153	399	31.2	370	333	296	259	222	185	147
	62	405	27.7	405	390	364	331	295	258	221	390	30.7	390	378	362	325	288	251	214
	57	402	27.4	402	390	379	365	357	323	285	389	30.6	389	377	366	354	343	315	278
12000	72	449	29.0	325	284	247	206	164	-	-	431	32.0	319	279	239	198	157	-	-
	67	420	28.3	393	358	318	275	237	193	155	405	31.3	392	351	311	270	230	189	148
	62	414	28.0	414	402	391	350	311	268	227	399	30.9	399	387	376	342	302	261	221
	57	413	27.6	413	401	390	375	364	332	297	399	30.8	399	387	375	363	351	329	291
13000	72	453	29.4	340	296	256	211	166	-	-	434	32.1	335	291	248	204	159	-	-
	67	431	28.4	425	372	333	289	245	201	158	411	31.4	409	369	326	282	238	194	149
	62	424	27.9	424	412	397	368	322	281	234	408	31.0	408	396	383	357	315	272	228
	57	424	27.9	424	409	397	385	370	350	314	408	31.0	408	395	383	371	358	343	304
14000	72	459	29.5	356	312	265	214	168	-	-	438	32.2	351	304	257	209	161	-	-
	67	431	28.8	431	393	347	300	253	205	159	416	31.5	416	386	340	293	246	198	150
	62	431	28.1	431	419	404	377	340	291	244	416	31.2	416	403	390	372	329	282	235
	57	430	28.4	430	415	406	391	379	367	326	415	31.2	415	402	390	377	365	353	315
15000	72	461	29.6	372	321	273	223	171	-	-	441	32.3	367	316	266	215	163	-	-
	67	440	28.9	440	404	360	312	260	209	155	423	31.6	423	400	354	304	254	203	150
	62	437	28.3	437	424	415	403	348	302	248	422	31.3	422	409	397	385	340	292	241
	57	439	28.3	439	424	412	396	387	372	339	422	31.3	422	409	396	383	371	358	326

TABLE 33: COOLING PERFORMANCE 30 TON HIGH CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		95°F									105°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
6000	72	369	34.5	217	197	177	157	136	-	-	353	38.4	211	191	171	150	130	-	-
	67	340	33.8	253	233	214	194	174	154	133	325	37.5	247	227	207	187	167	147	126
	62	314	33.0	288	268	248	229	209	189	169	299	36.7	281	262	242	222	202	182	162
	57	302	32.4	302	293	282	262	243	223	203	291	36.1	291	282	274	256	236	216	196
7000	72	381	34.8	234	210	187	163	139	-	-	364	38.7	227	204	180	156	132	-	-
	67	352	34.1	276	252	229	206	183	159	135	337	37.9	269	246	223	199	176	152	128
	62	326	33.4	317	294	270	247	224	201	178	310	37.1	309	286	264	240	217	194	171
	57	321	32.8	321	312	303	287	264	241	218	309	36.7	309	300	291	280	257	234	211
8000	72	390	35.0	250	223	196	169	141	-	-	372	39.0	243	216	189	162	135	-	-
	67	362	34.3	298	271	245	218	191	164	137	346	38.2	291	264	238	211	184	157	129
	62	338	33.6	338	319	292	265	239	212	185	325	37.3	325	312	285	258	232	205	178
	57	338	33.1	338	328	318	308	285	258	231	325	37.1	325	315	306	296	277	251	224
9000	72	397	35.2	265	235	205	175	144	-	-	378	39.2	259	229	199	168	137	-	-
	67	370	34.5	320	290	260	230	199	169	138	353	38.2	313	283	253	223	192	162	131
	62	352	33.8	352	341	313	283	253	223	193	338	37.5	338	328	306	276	246	216	185
	57	352	33.5	352	341	331	320	305	275	245	338	37.3	338	328	317	308	298	268	237
10000	72	402	35.3	281	248	214	180	146	-	-	383	39.3	275	241	208	174	139	-	-
	67	376	34.6	341	308	274	241	207	173	139	359	38.5	335	301	267	234	200	166	132
	62	365	34.0	365	354	334	300	267	233	200	350	37.9	350	339	327	293	260	226	193
	57	364	33.8	364	353	342	331	321	291	258	349	37.6	349	339	328	317	307	284	251
11000	72	407	35.5	297	260	223	186	148	-	-	388	39.4	291	254	217	179	141	-	-
	67	382	34.7	363	326	289	252	215	178	140	365	38.7	357	319	282	245	208	171	132
	62	375	34.1	375	364	353	318	281	244	207	360	37.9	360	348	337	310	274	237	200
	57	375	34.1	375	363	352	341	329	307	271	360	37.9	360	348	337	326	315	299	264
12000	72	412	35.5	313	273	232	191	150	-	-	392	39.5	307	266	226	185	143	-	-
	67	388	34.8	384	344	304	264	223	183	141	369	38.8	369	337	297	257	216	175	134
	62	384	34.3	384	372	361	334	294	254	214	369	38.2	369	357	346	326	287	247	206
	57	384	34.3	384	372	360	349	337	322	284	368	38.1	368	356	345	333	322	311	276
13000	72	415	35.6	329	285	241	197	152	-	-	396	39.9	322	278	235	190	145	-	-
	67	393	34.9	393	363	319	275	231	187	141	377	38.9	377	354	312	268	224	180	134
	62	392	34.5	392	380	368	348	308	264	221	376	38.4	376	364	352	341	301	257	213
	57	392	34.5	392	380	368	356	344	332	295	376	38.4	376	364	352	340	328	317	287
14000	72	418	35.7	345	297	250	203	154	-	-	399	40.0	338	291	244	196	147	-	-
	67	400	34.9	400	378	333	286	239	191	142	383	39.0	383	369	326	279	232	184	135
	62	400	34.7	400	387	375	362	320	274	227	383	38.6	383	371	359	347	313	267	220
	57	399	34.6	399	387	374	362	350	338	306	382	38.6	382	370	358	346	334	322	299
15000	72	421	35.8	361	310	259	208	156	-	-	401	40.1	354	303	252	202	150	-	-
	67	406	35.0	406	391	347	297	247	196	144	389	39.1	389	377	339	291	239	188	137
	62	406	34.8	406	393	380	368	332	284	234	389	38.8	389	376	364	352	324	278	227
	57	405	34.8	405	393	380	368	355	343	316	388	38.8	388	376	364	351	339	327	309

TABLE 33: COOLING PERFORMANCE 30 TON HIGH CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		115°F									125°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
6000	72	336	42.9	204	184	164	144	123	-	-	318	48.0	196	176	156	139	115	-	-
	67	310	41.9	240	220	200	180	160	140	119	295	47.0	232	212	193	173	153	133	112
	62	286	41.2	274	255	235	215	195	175	155	275	46.5	267	247	227	208	188	168	148
	57	280	40.3	280	271	263	248	229	209	189	269	45.0	269	260	249	238	222	202	182
7000	72	346	43.3	220	197	173	150	126	-	-	327	48.6	213	189	166	145	121	-	-
	67	321	42.4	262	239	216	192	169	145	121	304	47.6	255	231	208	185	162	138	114
	62	297	41.5	297	280	257	233	210	187	163	287	46.6	281	276	249	226	203	180	154
	57	297	41.0	297	288	279	270	250	227	203	285	45.7	285	276	267	257	243	220	194
8000	72	354	43.5	236	210	183	155	128	-	-	336	48.5	229	205	178	148	120	-	-
	67	329	42.6	284	258	231	204	177	150	122	311	47.5	277	253	224	197	170	143	116
	62	312	41.8	312	303	277	251	224	198	171	299	47.1	299	292	268	244	215	191	164
	57	312	41.4	312	302	293	283	270	244	217	299	46.0	299	289	279	269	264	237	210
9000	72	359	43.7	252	222	192	161	130	-	-	340	48.7	244	214	184	154	123	-	-
	67	335	42.8	306	276	246	216	185	155	123	316	48.3	299	269	239	209	178	148	114
	62	324	42.0	324	314	299	269	238	208	178	310	47.3	310	299	292	262	229	199	172
	57	324	41.8	324	314	304	294	284	260	230	310	47.0	310	299	292	278	263	251	224
10000	72	364	43.9	268	235	201	167	132	-	-	345	49.1	260	230	193	159	125	-	-
	67	341	43.0	328	294	260	227	193	159	124	322	48.1	320	287	253	220	186	152	115
	62	335	42.4	335	324	314	286	252	219	185	320	47.5	320	309	295	279	243	212	176
	57	334	42.2	334	324	314	303	293	277	243	319	47.6	319	308	300	289	279	270	234
11000	72	369	44.0	284	247	210	172	134	-	-	350	49.3	276	239	202	165	127	-	-
	67	345	43.1	345	312	275	238	201	164	125	322	47.9	327	305	268	231	194	157	119
	62	344	42.5	344	333	322	303	266	229	192	327	47.9	327	319	308	297	257	220	183
	57	344	42.3	344	333	322	311	301	291	256	327	47.3	327	318	307	296	287	283	247
12000	72	372	44.1	300	259	219	178	136	-	-	352	49.3	292	252	211	170	129	-	-
	67	353	43.3	353	331	290	250	209	168	126	340	48.3	336	326	283	243	202	162	117
	62	352	42.5	352	341	329	318	280	239	199	333	47.2	333	324	310	310	273	230	193
	57	352	42.5	352	340	329	318	307	296	267	336	47.5	336	324	312	304	292	277	257
13000	72	375	44.2	316	272	228	184	139	-	-	352	48.5	311	267	220	179	134	-	-
	67	360	43.4	360	347	305	261	217	173	128	342	48.4	342	342	298	254	210	166	123
	62	359	42.8	359	347	336	325	293	250	206	341	47.7	341	329	320	300	284	243	200
	57	359	42.7	359	347	335	324	313	302	280	341	47.4	341	329	317	308	299	287	274
14000	72	378	44.3	332	284	237	189	141	-	-	355	48.6	327	276	229	182	136	-	-
	67	366	43.5	366	354	319	272	225	177	120	349	48.4	349	333	312	265	218	170	97
	62	366	43.1	366	354	342	330	305	260	213	349	48.2	349	336	324	311	296	253	206
	57	365	43.1	365	353	341	330	318	307	290	348	48.1	348	336	323	314	302	293	279
15000	72	381	44.3	347	297	246	195	139	-	-	361	48.4	340	292	241	187	123	-	-
	67	371	43.4	371	359	332	283	233	182	128	352	47.9	352	337	326	273	229	178	117
	62	371	43.3	371	359	347	335	315	270	219	352	48.3	352	342	329	317	305	260	210
	57	371	43.3	371	358	346	334	323	311	298	354	48.3	354	339	326	317	307	295	283

1. The capacities are gross ratings. For net capacity, deduct the supply air blower motor heat *MBh = 3.415 x kW). Refer to the appropriate Blower Performance table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors and the compressor motors but not the supply air blower motor.

TABLE 34: COOLING PERFORMANCE 40 TON STANDARD CAPACITY COIL

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		75°F									85°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
8000	72	530	39.3	303	280	253	226	195	-	-	509	43.3	296	270	243	216	188	-	-
	67	488	37.7	352	325	302	272	245	218	194	469	42.2	344	318	292	265	238	211	184
	62	454	37.5	397	375	345	319	295	266	239	435	41.4	391	365	338	312	286	259	232
	57	430	36.6	430	416	389	364	337	311	287	416	40.6	416	404	383	357	330	304	278
9000	72	544	39.0	323	293	259	232	198	-	-	522	43.5	313	283	252	222	191	-	-
	67	505	37.7	377	344	317	287	254	226	195	484	42.5	367	337	308	278	247	217	186
	62	466	37.8	427	397	367	340	310	280	250	447	41.7	419	390	360	331	301	271	241
	57	452	37.1	452	437	424	394	361	331	302	437	41.1	437	424	412	382	352	322	293
10000	72	556	39.3	339	302	272	238	200	-	-	533	43.7	329	295	262	228	193	-	-
	67	515	38.3	396	366	332	299	265	231	197	494	42.8	389	356	323	290	256	222	188
	62	471	38.1	450	421	391	358	325	288	258	455	42.0	448	415	382	349	316	282	249
	57	468	37.1	474	455	443	412	382	349	315	453	41.4	455	441	428	406	373	340	307
11000	72	566	39.5	355	318	281	244	206	-	-	542	43.9	345	308	271	234	196	-	-
	67	526	39.1	418	384	347	308	271	236	195	504	43.0	411	375	338	301	264	227	189
	62	488	38.3	488	446	412	376	339	302	265	471	42.2	471	439	403	367	330	293	257
	57	490	38.1	484	475	459	446	408	366	329	472	41.8	470	457	443	430	394	357	320
12000	72	572	39.7	371	330	287	246	205	-	-	548	44.1	361	321	280	239	198	-	-
	67	535	39.5	440	402	362	322	282	241	200	512	43.2	433	393	353	313	273	232	191
	62	506	38.6	500	469	432	393	353	313	273	487	42.4	485	462	424	384	344	304	264
	57	503	38.3	500	486	473	460	423	382	345	485	42.1	484	470	456	442	413	374	334
13000	72	580	39.6	383	340	296	252	207	-	-	555	44.2	376	333	289	245	200	-	-
	67	544	39.4	464	418	377	334	290	246	201	520	43.3	455	411	368	325	281	237	192
	62	518	39.0	515	498	448	410	367	323	280	499	42.6	498	482	443	402	358	315	271
	57	517	38.3	514	497	483	469	438	398	355	498	42.4	497	482	468	453	429	390	347
14000	72	585	40.0	399	352	305	261	209	-	-	560	44.4	392	345	298	251	202	-	-
	67	544	39.5	485	437	392	345	298	250	202	522	43.4	473	430	383	336	289	241	193
	62	528	38.1	528	510	476	426	381	334	287	509	42.6	509	494	461	418	372	325	278
	57	530	38.3	524	510	495	481	452	414	371	510	42.6	508	493	478	463	444	405	360
15000	72	589	40.1	415	368	314	263	215	-	-	564	44.5	408	358	307	256	205	-	-
	67	552	39.6	505	452	402	356	306	255	203	529	43.5	492	446	397	347	297	246	194
	62	540	38.5	537	522	487	443	391	343	294	520	42.8	519	504	477	433	385	336	285
	57	539	38.5	539	521	506	489	474	433	381	519	42.8	519	503	488	472	457	419	372
16000	72	593	40.2	433	377	323	269	214	-	-	568	44.6	424	370	316	262	207	-	-
	67	555	39.8	522	471	419	368	314	256	204	533	43.7	510	462	411	359	305	250	195
	62	551	38.7	548	533	500	462	402	353	301	530	43.0	529	513	492	447	397	346	292
	57	550	38.5	547	529	514	499	481	441	395	529	43.0	528	512	496	481	465	431	383
17000	72	599	40.0	442	391	332	278	216	-	-	573	44.6	437	383	325	268	209	-	-
	67	559	39.9	526	482	430	375	321	264	205	538	43.7	527	476	424	369	313	255	196
	62	559	38.7	556	540	524	476	418	365	306	538	43.2	537	521	505	461	409	355	299
	57	558	38.7	555	539	524	505	490	455	402	537	43.2	536	520	504	488	472	443	393
18000	72	602	40.1	464	398	341	280	218	-	-	576	44.7	451	393	334	273	211	-	-
	67	569	39.7	548	504	444	385	334	268	206	547	43.8	540	491	436	378	321	260	197
	62	568	38.9	565	546	530	486	429	373	311	546	43.4	545	528	512	473	420	363	306
	57	565	39.2	565	546	530	514	499	454	412	544	43.4	544	527	511	495	479	454	403
19000	72	608	40.2	471	408	354	289	223	-	-	581	44.8	464	403	343	279	214	-	-
	67	575	39.8	572	517	459	394	337	273	210	553	43.9	552	505	448	388	328	264	199
	62	575	39.1	572	556	536	491	437	378	319	553	43.5	552	535	518	484	430	371	312
	57	574	39.1	571	555	539	520	504	486	420	552	43.5	551	534	518	501	485	468	413
20000	72	608	40.6	486	421	364	292	226	-	-	582	44.9	476	413	351	284	216	-	-
	67	581	40.1	581	527	464	402	349	274	208	559	44.0	559	518	458	396	334	268	200
	62	583	39.5	577	561	545	505	449	386	324	560	43.7	558	541	524	500	441	379	317
	57	580	39.4	580	560	541	528	509	490	434	558	43.7	558	540	523	507	490	473	423

TABLE 34: COOLING PERFORMANCE 40 TON STANDARD CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																		
		95°F									105°F									
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
8000	72	488	48.1	288	261	234	207	180	-	-	467	53.7	279	253	226	199	171	-	-
	67	450	47.1	336	310	283	257	230	203	175	431	52.4	328	301	275	248	221	194	167
	62	416	46.0	383	356	330	304	277	251	224	397	51.3	373	348	321	295	268	242	215
	57	402	45.2	402	391	375	349	322	296	269	388	50.4	388	377	365	340	313	287	260
9000	72	500	48.5	304	274	244	213	183	-	-	478	54.0	296	266	235	205	174	-	-
	67	463	47.5	358	329	299	269	239	208	177	442	52.7	350	320	290	260	230	199	168
	62	428	46.3	411	382	352	322	292	262	232	409	51.6	403	373	343	313	283	253	223
	57	422	45.7	422	410	398	372	343	313	284	407	50.9	407	395	382	364	334	304	275
10000	72	510	48.7	320	287	253	219	185	-	-	487	54.3	312	278	245	211	176	-	-
	67	473	47.7	381	347	314	281	247	213	179	452	53.0	372	339	305	272	238	204	170
	62	439	46.6	439	407	373	340	307	274	240	423	51.9	423	397	364	331	298	264	231
	57	438	46.2	438	426	413	397	364	331	298	423	51.5	423	410	398	385	355	322	288
11000	72	518	48.9	336	299	262	225	187	-	-	494	54.5	328	291	254	217	179	-	-
	67	482	47.7	403	366	329	293	256	218	181	460	53.2	394	357	320	284	247	209	171
	62	454	46.8	454	431	394	358	321	284	248	437	52.1	437	422	385	349	312	275	238
	57	454	46.4	454	440	427	414	383	348	311	436	51.9	436	424	411	398	375	339	302
12000	72	524	49.1	352	312	272	231	190	-	-	500	54.7	344	303	263	222	181	-	-
	67	489	47.9	425	384	344	304	264	223	182	466	53.6	416	375	335	295	255	214	173
	62	468	47.0	468	451	415	375	335	295	255	449	52.4	449	436	405	366	326	286	246
	57	467	46.7	467	453	439	425	403	365	324	449	52.1	449	435	422	409	393	355	315
13000	72	530	49.3	368	325	281	237	192	-	-	505	54.9	359	316	272	228	183	-	-
	67	496	48.1	446	403	359	316	272	228	183	472	53.8	437	394	350	307	263	219	174
	62	480	47.2	480	465	434	393	349	306	262	461	52.8	461	447	421	383	340	296	253
	57	479	47.1	479	465	451	436	418	381	338	460	52.4	460	446	432	418	405	371	328
14000	72	535	49.4	384	337	290	242	194	-	-	510	55.0	375	328	281	234	185	-	-
	67	500	48.2	463	421	374	327	280	232	184	478	53.9	455	410	365	318	271	223	175
	62	490	47.5	490	476	449	409	363	316	269	471	52.8	471	456	440	399	354	307	260
	57	490	47.4	490	475	460	445	431	395	350	470	52.7	470	456	441	427	413	384	341
15000	72	539	49.5	400	349	299	248	196	-	-	514	55.1	391	341	290	239	188	-	-
	67	506	48.3	481	437	389	338	288	237	185	483	54.0	472	425	378	329	279	228	176
	62	500	47.7	500	485	465	423	376	327	276	480	53.2	480	465	451	413	364	316	267
	57	499	47.6	499	484	469	454	439	407	362	479	52.9	479	464	449	435	420	397	351
16000	72	543	49.6	415	362	308	254	199	-	-	518	55.2	406	353	299	245	190	-	-
	67	511	48.4	499	452	402	350	296	242	186	489	53.9	489	441	392	341	287	232	177
	62	509	47.9	509	493	478	435	388	337	283	488	53.4	488	473	458	426	375	326	274
	57	508	47.9	508	493	477	462	447	420	372	487	53.2	487	472	457	442	427	408	362
17000	72	547	49.7	429	374	317	259	201	-	-	521	55.3	418	364	308	251	192	-	-
	67	517	48.5	517	467	415	360	304	246	187	496	54.3	496	455	403	348	294	237	178
	62	517	48.1	517	501	485	448	399	345	290	496	53.4	496	480	464	437	388	335	279
	57	516	48.1	516	500	484	469	453	431	383	495	53.4	495	479	464	448	433	419	372
18000	72	550	49.8	440	385	326	265	203	-	-	524	55.4	431	374	317	256	194	-	-
	67	525	48.7	525	479	426	369	310	251	188	503	54.4	503	468	414	358	301	241	179
	62	524	48.3	524	508	492	461	410	353	297	502	53.6	502	486	470	450	399	343	284
	57	523	48.2	523	507	491	475	459	444	393	502	53.6	502	486	470	454	439	424	382
19000	72	554	49.9	455	395	333	270	205	-	-	527	55.5	444	384	324	262	196	-	-
	67	531	48.8	531	494	437	379	318	255	189	509	54.5	509	484	426	367	307	246	180
	62	531	48.4	531	514	498	474	421	362	302	509	53.8	509	493	476	461	410	351	289
	57	530	48.4	530	513	497	481	465	449	403	508	53.8	508	492	476	460	444	429	390
20000	72	556	49.9	466	404	340	276	207	-	-	530	55.6	456	394	331	268	199	-	-
	67	537	48.8	537	507	449	387	322	260	191	515	54.5	515	494	437	375	313	250	181
	62	537	48.6	537	520	503	487	431	370	307	514	54.2	514	498	482	466	419	359	294
	57	536	48.6	536	519	503	486	470	454	411	514	54.1	514	497	481	465	449	433	398

TABLE 34: COOLING PERFORMANCE 40 TON STANDARD CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		115°F									125°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
8000	72	446	60.0	271	244	217	190	163	-	-	425	65.6	262	236	209	182	154	-	-
	67	411	58.5	319	292	266	239	212	185	158	392	63.8	311	283	258	230	203	176	150
	62	379	57.5	365	339	312	286	259	233	206	360	62.8	355	331	303	277	250	224	197
	57	373	56.5	373	362	351	330	304	278	251	359	61.7	359	348	341	321	295	269	242
9000	72	456	60.3	287	257	227	196	165	-	-	434	65.8	279	249	218	188	156	-	-
	67	421	59.1	341	311	281	251	221	190	159	400	64.3	333	302	272	242	212	181	150
	62	391	57.7	391	363	334	304	274	244	214	372	63.0	383	354	325	295	265	235	205
	57	391	57.1	391	379	367	355	325	295	265	376	62.3	376	364	351	347	316	286	256
10000	72	464	60.3	303	270	236	202	168	-	-	441	65.9	295	261	228	194	159	-	-
	67	430	59.4	363	330	296	263	229	195	161	409	64.7	354	322	287	254	220	186	152
	62	406	57.9	406	388	355	321	288	255	222	390	63.2	390	378	346	312	279	245	213
	57	406	57.6	406	393	381	369	345	312	279	391	62.9	391	377	366	357	336	303	269
11000	72	470	60.6	319	282	245	208	170	-	-	446	66.2	311	274	237	200	162	-	-
	67	437	59.3	385	348	311	275	238	200	162	415	64.8	376	339	302	266	229	191	152
	62	419	58.4	419	407	376	339	303	266	229	402	63.7	402	398	367	330	294	257	219
	57	419	58.1	419	406	393	381	365	329	292	401	63.6	401	390	377	365	357	320	283
12000	72	475	61.1	335	295	254	214	172	-	-	451	66.7	327	286	245	205	163	-	-
	67	443	59.5	406	366	326	286	246	205	163	420	65.2	397	357	317	277	237	196	154
	62	431	58.4	431	418	395	357	316	276	236	412	63.8	412	403	385	348	307	267	227
	57	431	58.5	431	417	404	391	378	344	305	413	63.9	413	399	387	375	368	334	296
13000	72	481	61.2	351	307	263	219	174	-	-	456	66.8	342	298	254	210	165	-	-
	67	449	60.0	427	385	341	297	254	209	165	425	65.7	418	376	332	288	245	200	156
	62	441	58.6	441	427	414	372	330	287	243	422	64.2	422	409	401	362	321	277	234
	57	441	58.8	441	427	414	400	387	358	318	422	64.1	422	408	395	382	374	348	308
14000	72	485	61.4	367	320	272	225	177	-	-	460	67.0	358	311	263	217	168	-	-
	67	455	59.9	445	402	356	309	262	214	166	433	65.6	437	391	347	300	253	205	157
	62	450	59.2	450	436	423	386	344	297	250	431	64.5	431	416	414	376	335	288	241
	57	450	59.1	450	436	422	408	395	372	330	430	64.4	430	417	403	390	377	361	321
15000	72	489	61.5	383	332	282	231	179	-	-	464	67.1	374	324	273	222	171	-	-
	67	460	60.3	460	416	369	320	270	219	167	437	66.0	451	404	358	311	261	210	158
	62	459	59.4	459	444	431	400	356	308	257	439	64.9	439	424	417	390	344	297	248
	57	458	59.1	458	444	429	416	402	384	341	438	64.4	438	424	409	397	383	374	330
16000	72	492	61.6	397	345	291	236	181	-	-	467	67.2	388	336	282	227	172	-	-
	67	467	60.4	467	432	381	330	278	223	167	445	65.9	457	421	371	321	269	213	158
	62	466	59.7	466	452	437	414	367	316	264	445	65.2	445	432	417	405	354	305	255
	57	466	59.4	466	451	436	422	408	394	351	445	64.7	445	430	416	402	388	382	341
17000	72	495	61.7	410	355	300	242	183	-	-	469	67.3	399	345	291	234	174	-	-
	67	475	60.3	475	444	394	339	285	228	168	454	66.1	454	432	382	327	275	219	159
	62	473	59.6	473	458	443	429	378	323	271	452	64.9	452	437	422	418	367	313	260
	57	473	59.6	473	458	443	428	414	399	361	452	64.9	452	437	423	407	394	387	350
18000	72	498	61.8	422	367	307	248	186	-	-	472	67.4	413	356	298	239	177	-	-
	67	481	60.7	481	460	404	348	291	232	169	459	66.4	459	449	392	337	282	222	160
	62	480	59.9	480	464	449	434	389	331	276	458	65.2	458	442	427	423	378	321	263
	57	479	59.8	479	464	448	433	419	404	371	458	65.2	458	443	427	412	399	384	360
19000	72	501	61.9	434	375	314	253	188	-	-	474	67.5	423	364	305	245	179	-	-
	67	486	60.8	486	471	416	357	297	237	169	464	66.5	464	461	405	345	286	228	160
	62	485	60.1	485	470	454	439	398	339	281	463	65.5	463	449	432	426	387	328	268
	57	485	60.0	485	469	454	438	423	408	378	463	65.4	463	448	433	417	402	388	365
20000	72	503	62.0	447	385	321	259	190	-	-	477	67.7	437	375	312	251	182	-	-
	67	491	60.6	491	475	429	366	303	241	171	469	66.3	469	462	417	354	294	231	161
	62	491	60.2	491	475	459	444	407	347	286	468	65.8	468	453	438	423	395	336	273
	57	490	60.2	490	474	458	443	427	412	386	468	65.7	468	452	436	422	406	391	373

1. The capacities are gross ratings. For net capacity, deduct the supply air blower motor heat *MBh = 3.415 x kW). Refer to the appropriate Blower Performance table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors and the compressor motors but not the supply air blower motor.

TABLE 35: COOLING PERFORMANCE 40 TON HIGH CAPACITY COIL

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		75°F									85°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
8000	72	535	39.0	310	280	253	226	199	-	-	517	43.4	300	273	246	219	192	-	-
	67	492	38.2	357	331	302	278	251	224	197	476	42.4	348	322	295	269	242	215	188
	62	459	37.7	404	378	351	325	298	272	245	440	41.6	395	368	342	316	289	263	236
	57	432	36.7	432	421	393	370	343	317	290	421	40.8	421	409	386	360	334	308	281
9000	72	553	39.1	323	293	263	235	204	-	-	531	43.7	316	286	256	226	195	-	-
	67	510	38.9	380	350	317	288	260	230	199	490	42.8	371	341	311	281	251	221	190
	62	475	38.1	435	403	373	343	313	284	253	454	41.9	424	394	364	334	305	275	245
	57	457	37.2	457	442	427	400	362	335	305	443	41.2	443	430	416	386	355	326	296
10000	72	564	40.2	342	306	275	241	204	-	-	542	44.0	333	299	266	232	197	-	-
	67	520	38.8	402	369	336	302	269	235	201	501	43.0	393	360	327	294	260	226	192
	62	483	38.4	453	427	395	361	331	295	261	465	42.2	452	419	386	353	320	286	253
	57	480	37.3	480	464	449	415	385	352	319	462	41.6	462	448	435	409	377	343	310
11000	72	572	40.2	358	321	284	247	209	-	-	551	44.2	349	312	275	238	200	-	-
	67	528	39.4	421	384	351	314	280	240	202	511	43.3	415	378	342	305	269	231	193
	62	493	38.3	493	452	416	382	342	309	272	478	42.4	478	443	407	371	334	298	261
	57	492	38.4	492	481	469	444	408	369	332	478	42.0	478	464	451	434	398	361	324
12000	72	578	40.7	374	334	294	250	211	-	-	558	44.4	365	325	284	243	202	-	-
	67	539	39.3	446	406	366	326	285	245	206	520	43.4	437	397	357	317	277	236	195
	62	511	38.6	511	468	436	397	356	317	276	494	42.6	494	468	428	388	348	308	268
	57	508	38.6	508	494	483	464	426	389	349	493	42.3	493	479	465	450	417	378	338
13000	72	590	40.8	387	346	300	258	211	-	-	565	44.6	380	337	293	249	204	-	-
	67	543	39.5	467	421	381	337	294	249	204	527	43.6	459	415	372	329	285	241	196
	62	523	38.9	523	509	456	414	370	327	283	507	42.7	507	492	449	406	362	319	275
	57	526	38.3	526	508	494	480	440	405	362	507	42.6	507	492	477	462	437	395	351
14000	72	592	41.0	406	356	309	264	216	-	-	570	44.7	396	349	302	255	207	-	-
	67	559	39.6	493	443	395	349	301	257	206	534	43.7	481	434	387	340	293	246	197
	62	537	39.0	537	522	479	432	384	341	293	519	42.9	519	504	470	423	376	330	283
	57	536	38.6	536	521	507	489	466	418	375	519	42.9	519	503	488	473	455	411	364
15000	72	599	40.8	422	371	318	267	218	-	-	575	44.8	412	362	311	260	209	-	-
	67	561	39.8	516	461	413	360	309	259	207	539	43.8	502	452	402	351	301	250	198
	62	549	39.1	549	531	490	451	398	348	300	530	43.0	530	514	488	441	390	340	290
	57	546	38.9	546	534	516	498	486	438	385	529	43.1	529	514	498	482	467	427	377
16000	72	600	40.9	437	381	327	275	220	-	-	579	44.9	428	374	320	266	211	-	-
	67	571	39.6	529	477	425	371	317	266	208	545	43.9	521	470	416	363	309	255	199
	62	558	38.7	558	542	519	464	412	358	307	540	43.2	540	524	505	457	404	350	297
	57	557	38.8	557	542	526	508	493	450	400	539	43.3	539	523	507	491	475	441	390
17000	72	607	41.0	453	396	336	281	219	-	-	584	45.0	444	387	329	272	213	-	-
	67	570	40.0	543	492	440	382	325	268	209	550	44.1	541	487	431	374	317	259	200
	62	569	39.1	569	550	534	492	428	371	314	549	43.5	549	532	516	472	418	361	304
	57	569	39.0	569	552	534	518	500	464	414	548	43.5	548	532	515	499	482	454	403
18000	72	611	41.1	467	408	345	284	224	-	-	588	45.1	459	399	338	277	215	-	-
	67	577	40.3	577	513	454	394	333	275	210	557	44.2	557	503	446	385	325	264	201
	62	576	39.3	576	560	541	504	436	382	321	557	43.7	557	540	523	485	430	371	311
	57	576	39.2	576	559	543	524	508	472	420	556	43.7	556	539	523	506	489	466	413
19000	72	614	41.2	482	418	354	292	224	-	-	591	45.1	475	411	347	283	217	-	-
	67	587	40.4	587	532	467	406	341	276	211	565	44.3	565	517	458	397	333	268	203
	62	583	39.4	583	566	550	510	447	391	325	564	43.9	564	547	530	499	441	381	317
	57	585	39.1	585	566	549	530	517	498	441	564	43.8	564	546	529	512	496	479	423
20000	72	617	41.3	492	432	363	295	229	-	-	594	45.2	488	424	356	288	220	-	-
	67	593	40.8	593	534	475	413	351	284	215	572	44.4	572	532	470	408	341	273	204
	62	592	39.9	592	575	556	521	468	396	332	571	44.0	571	554	536	513	452	389	324
	57	594	39.8	594	575	558	539	519	503	438	571	44.0	571	553	536	518	501	484	433

TABLE 35: COOLING PERFORMANCE 40 TON HIGH CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																		
		95°F									105°F									
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
8000	72	497	48.4	291	265	238	211	184	-	-	475	54.0	283	256	229	202	175	-	-
	67	458	47.2	339	313	287	260	233	206	179	438	52.6	330	304	278	251	224	197	170
	62	422	46.2	386	359	333	307	280	254	227	405	51.5	377	351	324	298	271	245	218
	57	408	45.4	408	396	378	351	325	299	272	393	50.5	393	382	369	343	316	290	263
9000	72	509	48.7	308	278	248	217	186	-	-	487	54.1	299	269	239	208	177	-	-
	67	470	47.5	362	332	303	273	242	212	181	450	53.0	353	323	293	264	233	203	172
	62	434	46.5	414	385	355	325	296	266	236	415	51.9	405	376	346	316	286	257	226
	57	428	45.9	428	416	403	375	347	317	287	412	51.3	412	400	388	367	338	308	278
10000	72	519	48.8	324	291	257	223	189	-	-	495	54.6	315	282	248	214	180	-	-
	67	481	47.8	384	351	318	285	251	217	183	460	53.2	375	342	309	275	242	208	174
	62	447	46.8	444	410	377	344	310	277	244	429	52.2	429	400	368	334	301	268	234
	57	445	46.4	445	432	420	401	368	334	301	429	51.7	429	416	404	391	358	325	292
11000	72	528	49.1	340	303	266	229	191	-	-	503	54.9	331	294	257	220	182	-	-
	67	491	48.0	407	370	333	296	259	222	184	468	53.5	397	360	324	287	250	213	175
	62	462	47.1	462	434	398	361	325	288	251	445	52.4	445	425	389	352	315	279	242
	57	462	46.6	462	447	434	421	388	352	315	444	52.2	444	430	418	405	378	342	305
12000	72	535	49.2	356	316	275	235	193	-	-	509	55.1	347	307	267	226	184	-	-
	67	499	48.2	428	388	348	308	268	227	185	476	53.7	419	379	339	299	258	218	176
	62	476	47.3	476	460	419	379	339	299	259	457	52.7	457	444	409	370	329	290	249
	57	476	46.9	476	462	447	434	408	368	328	457	52.4	457	443	429	416	399	359	319
13000	72	540	49.4	372	328	285	240	196	-	-	515	55.2	363	319	276	231	187	-	-
	67	506	48.4	450	407	363	320	276	232	187	480	53.9	440	397	354	310	267	222	177
	62	489	47.4	489	474	440	397	353	310	266	469	53.0	469	455	429	387	343	300	256
	57	488	47.4	488	474	459	444	428	385	341	469	52.7	469	454	440	426	413	375	332
14000	72	546	49.5	387	341	294	246	198	-	-	520	55.4	379	332	285	237	189	-	-
	67	510	48.5	471	425	378	331	284	236	188	487	54.0	463	416	368	322	274	227	179
	62	500	47.6	500	485	460	414	367	320	273	480	53.1	480	465	449	405	357	311	263
	57	500	47.7	500	484	469	455	440	402	354	479	53.0	479	464	450	435	421	391	345
15000	72	550	49.7	403	353	303	252	200	-	-	524	55.5	395	344	294	243	191	-	-
	67	516	48.6	491	443	392	342	292	241	189	492	54.2	483	434	383	333	282	232	180
	62	510	47.8	510	495	478	431	381	331	280	489	53.5	489	474	460	421	371	321	270
	57	510	47.9	510	494	479	464	448	416	368	489	53.3	489	474	459	444	429	405	358
16000	72	555	49.8	419	366	312	257	202	-	-	528	55.6	410	357	303	248	193	-	-
	67	521	48.8	511	461	407	354	300	245	190	499	54.3	499	450	398	344	290	236	181
	62	520	48.2	520	504	488	447	395	341	287	498	53.7	498	482	468	434	385	331	277
	57	519	48.2	519	503	487	472	456	430	380	497	53.5	497	482	466	451	436	417	370
17000	72	559	49.9	435	378	321	263	205	-	-	532	55.7	426	369	312	254	195	-	-
	67	529	48.9	529	478	422	365	308	250	191	507	54.4	507	465	413	355	298	241	182
	62	528	48.4	528	512	496	458	408	351	294	506	53.8	506	490	474	450	398	341	284
	57	527	48.4	527	511	495	479	463	442	392	506	53.7	506	489	474	458	443	428	381
18000	72	563	50.0	451	390	330	269	206	-	-	536	55.8	443	381	321	260	197	-	-
	67	536	49.0	536	492	436	376	316	254	192	514	54.7	514	480	424	367	306	245	183
	62	536	48.6	536	519	503	472	421	361	301	513	54.0	513	497	481	465	409	352	291
	57	535	48.6	535	518	502	486	469	453	403	513	53.9	513	496	480	464	448	433	390
19000	72	566	50.0	467	403	339	274	209	-	-	539	55.9	458	394	330	265	200	-	-
	67	543	49.1	543	505	448	387	324	259	194	521	54.8	521	496	437	376	314	249	184
	62	543	48.8	543	526	509	486	432	371	308	520	54.1	520	503	487	471	420	361	298
	57	542	48.8	542	525	508	492	475	459	409	519	54.1	519	503	486	470	454	438	399
20000	72	569	50.1	481	415	348	280	211	-	-	542	56.0	471	405	339	271	202	-	-
	67	550	49.2	550	524	461	399	331	263	194	527	55.2	527	510	448	386	321	254	185
	62	549	48.9	549	532	515	498	439	380	315	526	54.6	526	509	493	476	429	369	305
	57	548	48.9	548	531	514	497	481	464	423	525	54.5	525	509	492	476	459	443	408

TABLE 35: COOLING PERFORMANCE 40 TON HIGH CAPACITY COIL (CONTINUED)

Air on Evaporator Coil		Temperature of Air on Condenser Coil																	
		115°F									125°F								
CFM	WB (°F)	Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)							Total Cap.[1] (MBH)	Total[2] Input (kW)	Sensible Capacity (MBH) Return Dry Bulb (°F)						
				86	83	80	77	74	71	68			86	83	80	77	74	71	68
8000	72	453	60.3	274	247	220	193	166	-	-	431	65.9	266	238	211	184	157	-	-
	67	417	59.0	321	295	269	242	215	188	161	397	64.4	312	286	260	233	206	179	152
	62	384	57.7	367	342	315	288	262	236	209	367	63.0	358	334	306	279	253	227	200
	57	378	56.7	378	367	356	333	307	281	254	363	61.8	363	353	347	325	298	272	245
9000	72	464	60.7	290	260	230	199	168	-	-	442	66.1	281	251	221	190	159	-	-
	67	428	59.4	344	314	284	254	224	194	163	408	64.9	335	305	274	245	215	185	154
	62	396	57.9	396	367	337	307	277	247	217	377	63.3	387	358	328	298	267	238	207
	57	396	57.3	396	384	373	358	328	298	268	380	62.7	380	368	358	350	319	289	259
10000	72	472	60.7	306	273	239	205	171	-	-	448	66.5	297	264	230	196	162	-	-
	67	438	59.4	366	333	300	266	233	199	164	417	64.8	357	324	291	256	224	190	155
	62	412	58.2	412	391	358	325	292	258	225	394	63.6	397	381	349	315	283	249	215
	57	412	57.9	412	400	387	375	348	316	282	396	63.2	396	384	371	365	338	307	273
11000	72	478	61.0	322	285	248	211	173	-	-	453	66.8	313	276	239	202	164	-	-
	67	446	59.7	388	351	315	278	241	203	166	423	65.2	378	341	306	269	232	194	157
	62	427	58.9	427	413	379	342	306	269	232	410	64.2	410	404	370	333	296	260	223
	57	426	58.3	426	413	400	387	369	332	296	408	63.9	408	396	384	371	359	322	286
12000	72	484	61.5	338	298	258	217	175	-	-	458	67.4	329	289	250	208	166	-	-
	67	451	59.9	409	370	329	289	249	208	167	428	65.4	400	361	320	280	239	199	158
	62	438	59.0	438	425	400	360	320	280	239	419	64.4	419	409	390	351	310	271	229
	57	438	58.8	438	425	411	398	385	349	309	419	64.3	419	406	393	380	376	340	300
13000	72	490	61.6	354	310	267	222	178	-	-	465	67.4	345	301	258	213	169	-	-
	67	457	60.1	431	388	344	301	257	213	168	431	65.6	421	378	335	291	248	203	158
	62	449	59.2	449	436	420	377	334	290	247	429	64.8	429	417	409	367	324	280	237
	57	449	59.1	449	435	421	408	394	365	322	430	64.4	430	415	402	390	379	355	313
14000	72	494	61.8	370	323	276	228	180	-	-	468	67.7	362	314	267	219	171	-	-
	67	464	60.5	453	406	359	312	265	217	169	441	66.0	445	397	349	303	255	208	160
	62	459	59.5	459	445	431	394	348	301	254	439	65.0	439	425	420	385	338	292	244
	57	459	59.5	459	444	431	416	402	380	335	438	64.8	438	424	412	396	383	369	326
15000	72	499	61.9	386	335	285	234	182	-	-	473	67.7	378	326	276	225	173	-	-
	67	469	60.4	469	424	374	324	273	222	169	445	66.0	461	415	365	315	263	213	160
	62	468	59.8	468	453	439	408	361	311	260	447	65.5	447	432	421	398	351	301	250
	57	468	59.5	468	453	438	424	410	395	348	447	64.9	447	433	418	404	391	384	338
16000	72	502	62.1	402	348	294	239	184	-	-	475	67.9	393	339	285	230	175	-	-
	67	477	60.8	477	442	389	335	281	227	170	455	66.3	465	431	380	325	271	218	161
	62	476	60.1	476	461	446	425	373	321	267	454	65.6	454	439	426	412	363	311	257
	57	476	59.8	476	460	445	430	416	402	359	454	65.1	454	439	424	409	396	389	349
17000	72	505	62.2	418	360	303	245	186	-	-	478	68.0	409	351	294	236	176	-	-
	67	485	60.7	485	455	404	346	289	231	171	463	66.2	463	442	395	336	279	222	162
	62	483	60.0	483	468	453	438	385	330	274	461	65.4	461	446	431	430	375	320	264
	57	483	60.0	483	467	452	437	422	407	368	462	65.3	462	445	431	416	402	393	357
18000	72	508	62.3	432	372	312	251	189	-	-	481	68.1	424	363	303	242	180	-	-
	67	491	61.1	491	472	414	357	297	235	172	469	66.8	469	460	402	348	287	226	163
	62	490	60.2	490	474	458	444	398	339	281	467	65.6	467	452	436	437	386	330	271
	57	489	60.2	489	474	458	442	427	412	380	467	65.5	467	452	436	420	406	392	367
19000	72	511	62.3	446	385	321	256	190	-	-	484	68.2	437	376	312	247	181	-	-
	67	497	61.1	497	481	428	367	305	240	174	475	66.8	475	472	417	356	295	230	164
	62	496	60.5	496	480	464	449	408	348	288	473	65.8	473	457	442	434	396	338	278
	57	496	60.4	496	479	464	448	432	417	389	473	65.7	473	457	442	426	411	396	379
20000	72	513	62.4	460	396	330	262	193	-	-	486	68.3	450	386	321	253	184	-	-
	67	502	61.0	502	486	441	376	311	244	175	479	67.0	479	472	428	363	301	235	166
	62	502	60.6	502	485	469	453	420	356	294	479	66.3	479	462	447	431	410	345	284
	57	501	60.6	501	485	469	453	437	421	399	478	66.2	478	463	447	432	415	400	384

1. The capacities are gross ratings. For net capacity, deduct the supply air blower motor heat *MBh = 3.415 x kW). Refer to the appropriate Blower Performance table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors and the compressor motors but not the supply air blower motor.

CFM, STATIC PRESSURE, AND POWER - ALTITUDE AND TEMPERATURE CORRECTIONS

The information below should be used to assist in application of product when being applied at altitudes at or exceeding 1000 feet above sea level.

The air flow rates listed in the standard blower performance tables are based on standard air at sea level. As the altitude or temperature increases, the density of air decreases. In order to use the indoor blower tables for high altitude applications, certain corrections are necessary.

A centrifugal fan is a "constant volume" device. This means that, if the rpm remains constant, the CFM delivered is the same regardless of the density of the air. However, since the air at high altitude is less dense, less static pressure will be generated and less power will be required than a similar application at sea level. Air density correction factors are shown in Table 36 and Figure 21.

TABLE 36: ALTITUDE CORRECTION FACTORS

AIR TEMP	ALTITUDE (FEET)										
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
40	1.060	1.022	0.986	0.950	0.916	0.882	0.849	0.818	0.788	0.758	0.729
50	1.039	1.002	0.966	0.931	0.898	0.864	0.832	0.802	0.772	0.743	0.715
60	1.019	0.982	0.948	0.913	0.880	0.848	0.816	0.787	0.757	0.729	0.701
70	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.715	0.688
80	0.982	0.947	0.913	0.880	0.848	0.817	0.787	0.758	0.730	0.702	0.676
90	0.964	0.929	0.897	0.864	0.833	0.802	0.772	0.744	0.716	0.689	0.663
100	0.946	0.912	0.880	0.848	0.817	0.787	0.758	0.730	0.703	0.676	0.651

The examples below will assist in determining the airflow performance of the product at altitude.

Example 1: What are the corrected CFM, static pressure, and BHP at an elevation of 5,000 ft. if the blower performance data is 6,000 CFM, 1.5 IWC and 4.0 BHP?

Solution: At an elevation of 5,000 ft the indoor blower will still deliver 6,000 CFM if the rpm is unchanged. However, Table 36 must be used to determine the static pressure and BHP. Since no temperature data is given, we will assume an air temperature of 70°F. Table 36 shows the correction factor to be 0.832.

Corrected static pressure = 1.5 x 0.832 = 1.248 IWC

Corrected BHP = 4.0 x 0.832 = 3.328

Example 2: A system, located at 5,000 feet of elevation, is to deliver 6,000 CFM at a static pressure of 1.5". Use the unit blower tables to select the blower speed and the BHP requirement.

Solution: As in the example above, no temperature information is given so 70°F is assumed.

The 1.5" static pressure given is at an elevation of 5,000 ft. The first step is to convert this static pressure to equivalent sea level conditions.

Sea level static pressure = 1.5 / .832 = 1.80"

Enter the blower table at 6000 sCFM and static pressure of 1.8". The rpm listed will be the same rpm needed at 5,000 ft.

Suppose that the corresponding BHP listed in the table is 3.2. This value must be corrected for elevation.

BHP at 5,000 ft = 3.2 x .832 = 2.66

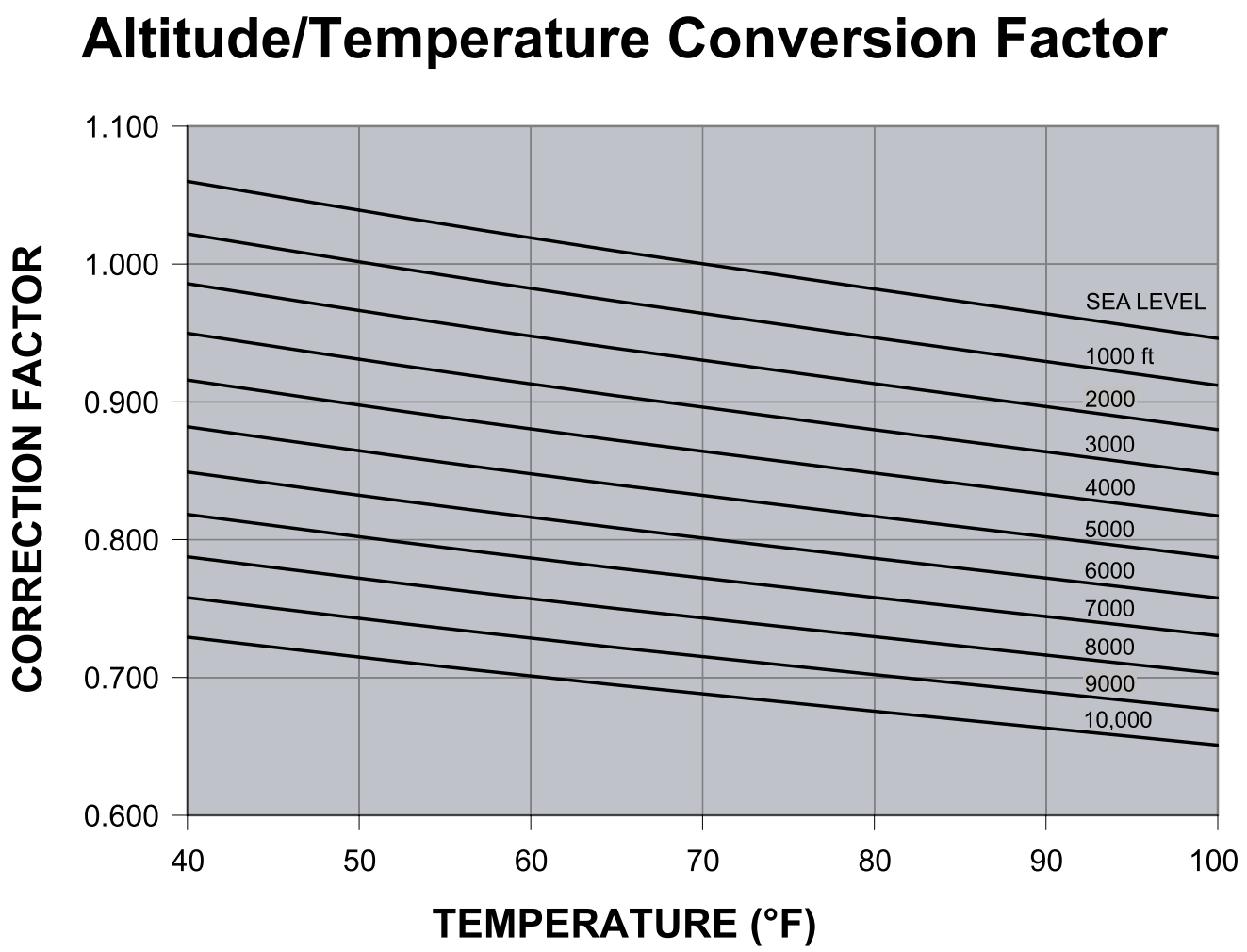


FIGURE 21 - ALTITUDE/TEMPERATURE CONVERSION FACTOR

TABLE 37: FAN PERFORMANCE - 25 TON[1, 2]

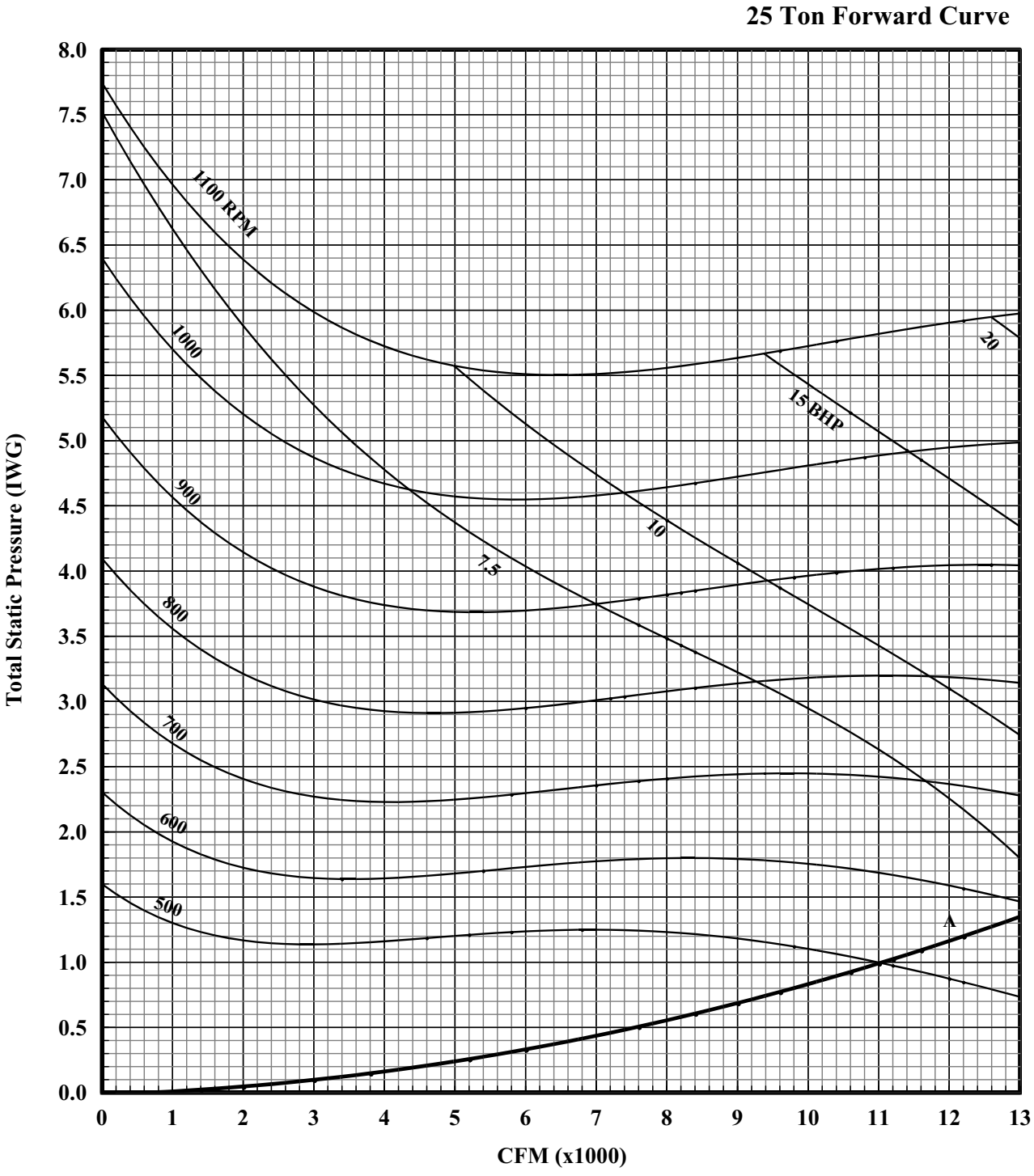
AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	-	-	342	0.6	404	0.9	456	1.1	506	1.4
5000	306	0.7	362	0.9	415	1.1	465	1.4	512	1.7
6000	337	1.0	387	1.2	433	1.5	478	1.8	521	2.1
7000	370	1.4	415	1.7	456	2.0	497	2.3	535	2.7
8000	408	2.0	446	2.3	484	2.6	520	2.9	555	3.3
9000	444	2.7	480	3.0	514	3.4	547	3.8	579	4.2
10000	481	3.6	514	3.9	545	4.3	576	4.7	606	5.1
11000	520	4.6	550	5.0	579	5.4	608	5.8	635	6.3
12000	557	5.8	585	6.3	612	6.7	638	7.1	664	7.5
13000	596	7.2	622	7.7	647	8.1	671	8.6	696	9.1

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	549	1.7	591	2.0	628	2.3	663	2.7	698	3.0
5000	555	2.1	597	2.4	634	2.8	670	3.2	705	3.5
6000	562	2.5	602	2.9	638	3.3	674	3.7	709	4.1
7000	573	3.0	610	3.4	645	3.9	679	4.3	713	4.7
8000	591	3.7	624	4.1	657	4.6	689	5.0	720	5.4
9000	611	4.6	642	5.0	673	5.4	703	5.9	732	6.4
10000	634	5.5	663	6.0	692	6.4	719	6.9	747	7.4
11000	662	6.7	689	7.2	715	7.6	741	8.1	766	8.6
12000	690	8.0	714	8.5	739	9.0	763	9.5	787	10.0
13000	720	9.6	743	10.1	766	10.6	789	11.2	811	11.8

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	2.2		2.4		2.6		2.8		3.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	728	3.3	757	3.7	787	4.1	814	4.4	839	4.8
5000	736	3.9	767	4.3	798	4.7	825	5.1	851	5.5
6000	740	4.5	772	5.0	803	5.4	830	5.9	858	6.3
7000	744	5.2	775	5.6	805	6.1	833	6.6	861	7.1
8000	751	6.0	781	6.5	810	7.0	837	7.5	865	8.0
9000	760	6.9	789	7.4	817	7.9	843	8.4	870	9.0
10000	774	7.9	801	8.4	826	9.0	852	9.5	878	10.1
11000	792	9.2	817	9.7	841	10.2	865	10.8	890	11.4
12000	811	10.6	834	11.2	857	11.8	880	12.4	903	13.0
13000	833	12.3	855	12.9	877	13.5	899	14.1	921	14.7

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	3.2		3.4		3.6		3.8		4.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	864	5.1	890	5.5	913	5.9	935	6.3	957	6.7
5000	878	6.0	904	6.4	927	6.8	950	7.3	973	7.7
6000	885	6.8	911	7.3	935	7.7	959	8.2	983	8.7
7000	889	7.6	914	8.1	939	8.7	964	9.2	988	9.7
8000	892	8.5	918	9.1	942	9.6	967	10.2	992	10.8
9000	897	9.5	921	10.1	946	10.7	970	11.3	995	11.9
10000	903	10.7	927	11.3	951	11.9	975	12.6	999	13.2
11000	913	12.1	936	12.7	959	13.3	983	14.0	1005	14.6
12000	926	13.6	948	14.2	970	14.8	992	15.4	1013	16.1
13000	942	15.3	963	15.9	984	16.6	1005	17.3	1025	18.0

1. Fan performance is based on wet evaporator coils, clean 2” throwaway filters and system/cabinet effects at standard air density and 0 feet elevation.
2. Refer to Tables 10, 15, 21 and 42 for component additions and deductions to fan performance tables.
3. BHP includes drive losses.
4. **Shaded RPMs require Class II blower.**



A - Standard Unit

Note: Standard Unit includes wet evaporator coil, clean 2" throwaway filters, system and cabinet effects at standard air density and 0' elevation.

FIGURE 22 - FAN PERFORMANCE - 25 TON

TABLE 38: FAN PERFORMANCE - 30 TON [1, 2]

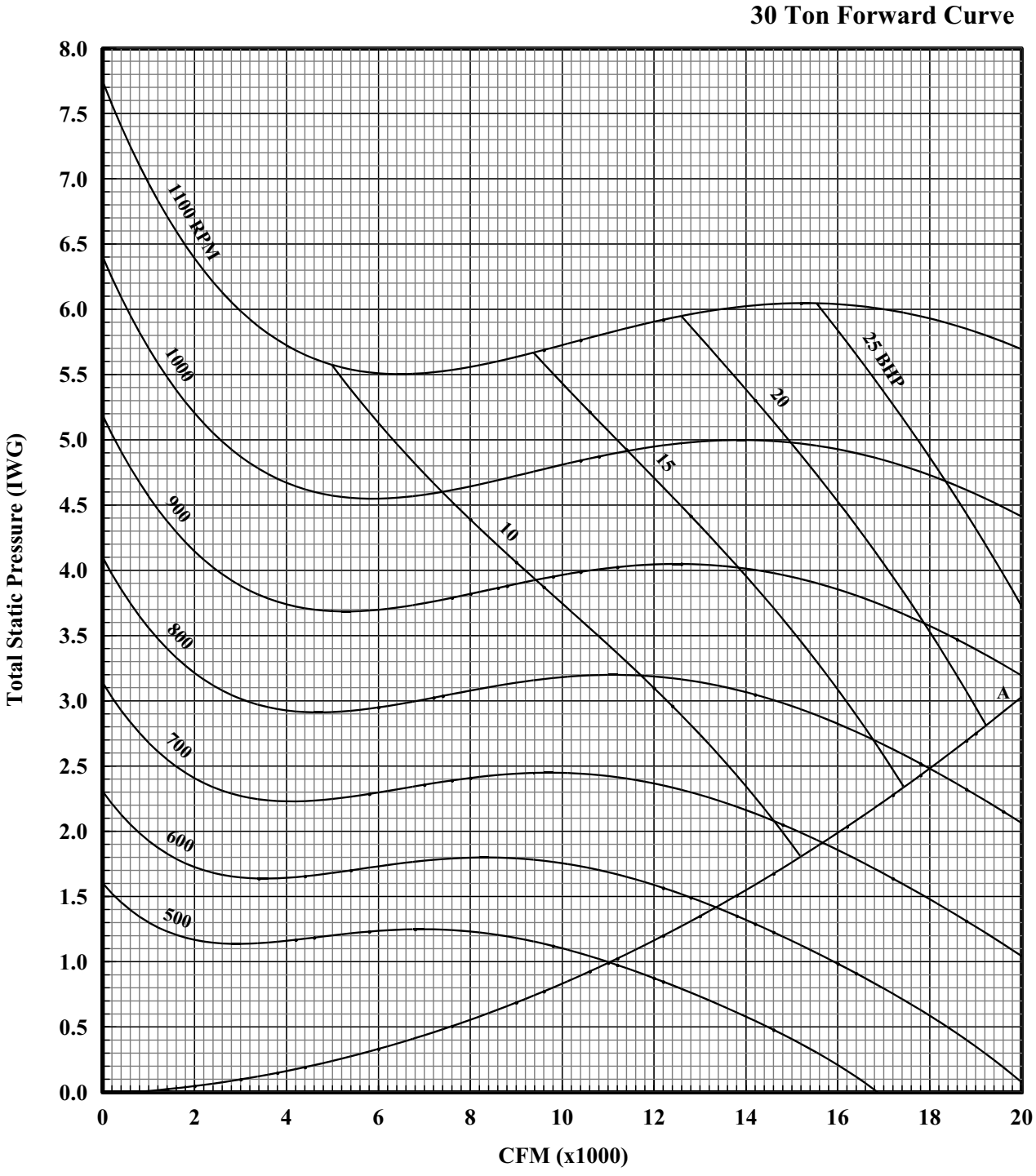
AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
6000	321	0.9	373	1.2	422	1.6	469	1.9	513	2.2
7000	357	1.4	404	1.7	447	2.0	490	2.3	529	2.7
8000	398	1.9	437	2.2	477	2.6	515	3.0	551	3.5
9000	436	2.6	473	2.9	509	3.4	543	3.8	577	4.2
10000	477	3.4	511	3.9	543	4.3	575	4.7	606	5.3
11000	519	4.4	549	4.9	579	5.4	609	5.9	637	6.4
12000	560	5.7	589	6.2	617	6.7	643	7.2	670	7.8
13000	603	7.1	629	7.7	654	8.2	680	8.8	705	9.3
14000	645	8.8	669	9.3	694	10.0	718	10.5	741	11.2
15000	688	10.7	711	11.3	733	12.1	755.6	12.7	778	13.3

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
6000	554	2.5	596	2.9	632	3.4	668	3.7	703	4.1
7000	568	3.2	607	3.6	642	4.0	676	4.4	710	4.8
8000	587	3.9	622	4.3	655	4.7	689	5.3	720	5.7
9000	610	4.7	642	5.1	673	5.7	704	6.2	734	6.7
10000	636	5.8	666	6.3	695	6.8	723	7.4	751	7.9
11000	665	6.9	693	7.5	720	8.0	746	8.6	773	9.2
12000	697	8.3	722	8.9	747	9.6	772	10.1	797	10.7
13000	729	10.0	753	10.5	777	11.2	801	11.9	824	12.5
14000	764	11.9	787	12.5	809	13.2	831	13.9	853	14.5
15000	800	14.0	821	14.6	842	15.3	863	16.0	884	16.7

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	2.2		2.4		2.6		2.8		3.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
6000	734	4.5	765	4.9	796	5.4	824	5.8	850	6.3
7000	741	5.3	772	5.8	803	6.3	830	6.7	858	7.2
8000	750	6.2	781	6.7	810	7.2	837	7.8	865	8.3
9000	763	7.2	792	7.8	820	8.3	847	8.9	873	9.5
10000	779	8.4	807	9.0	833	9.6	859	10.2	885	10.8
11000	799	9.8	824	10.4	849	11.0	874	11.7	899	12.3
12000	821	11.3	845	12.1	869	12.7	893	13.3	916	14.1
13000	847	13.2	869	13.9	892	14.6	914	15.2	936	15.9
14000	874	15.2	896	15.9	917	16.6	938	17.3	959	18.1
15000	904	17.4	924	18.3	944	19.0	964	19.7	984	20.5

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	3.2		3.4		3.6		3.8		4.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
6000	877	6.7	904	7.1	928	7.7	951	8.1	975	8.6
7000	885	7.7	911	8.2	935	8.7	959	9.2	984	9.7
8000	892	8.8	917	9.3	942	9.9	966	10.4	991	10.9
9000	900	10.0	925	10.6	949	11.1	974	11.8	998	12.4
10000	910	11.4	934	12.1	958	12.7	982	13.3	1006	14.0
11000	923	13.0	946	13.7	970	14.3	993	14.9	1015	15.5
12000	939	14.7	961	15.3	984	16.1	1006	16.8	1028	17.5
13000	958	16.6	980	17.3	1001	18.1	1022	18.8	1043	19.5
14000	980	18.8	1001	19.6	1021	20.4	1040	21.1	1060	21.8
15000	1004	21.2	1023	22.1	1043	22.9	1062	23.6	1081	24.5

1. Fan performance is based on wet evaporator coils, clean 2" throwaway filters and system/cabinet effects at standard air density and 0 feet elevation.
2. Refer to Tables 10, 15, 21 and 42 for component additions and deductions to fan performance tables.
3. BHP includes drive losses.
4. **Shaded RPMs require Class II blower.**



A - Standard Unit

Note: Standard Unit includes wet evaporator coil, clean 2" throwaway filters, system and cabinet effects at standard air density and 0' elevation.

FIGURE 23 - FAN PERFORMANCE - 30 TON

TABLE 39: FAN PERFORMANCE - 40 TON[1,2]

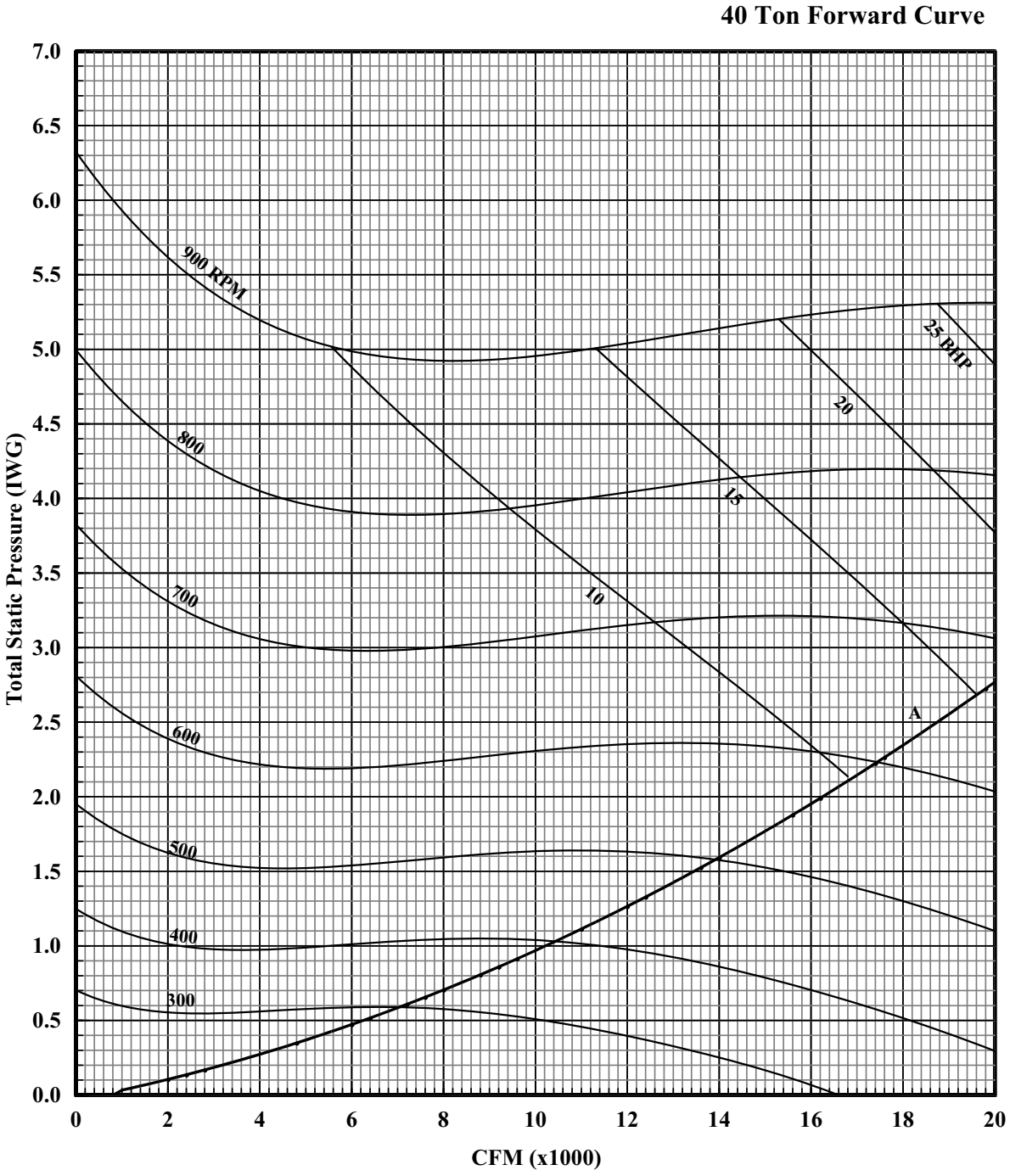
AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	304	1.4	348	1.8	393	2.2	431	2.6	469	3.0
9000	329	1.9	371	2.3	411	2.7	448	3.2	484	3.7
10000	356	2.4	396	2.8	432	3.4	467	3.9	502	4.4
11000	385	3.0	421	3.6	454	4.1	488	4.7	519	5.3
12000	414	3.9	446	4.5	479	5.0	510	5.7	539	6.2
13000	442	4.8	473	5.5	504	6.1	532	6.7	560	7.4
14000	472	6.0	502	6.6	529	7.2	556	8.0	583	8.6
15000	503	7.2	529	8.0	555	8.6	581	9.3	607	10.1
16000	532	8.7	557	9.5	583	10.2	607	10.9	631	11.8
17000	562	10.4	587	11.1	611	12.0	633	12.7	656	13.5
18000	593	12.3	616	13.1	638	13.9	660	14.7	682	15.4

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	506	3.5	537	4.0	569	4.4	601	4.9	627	5.5
9000	518	4.2	549	4.6	581	5.1	610	5.8	637	6.3
10000	532	4.9	563	5.5	594	6.1	621	6.6	648	7.1
11000	549	5.8	579	6.4	608	7.0	634	7.6	661	8.2
12000	568	6.8	596	7.5	623	8.1	649	8.7	675	9.5
13000	588	8.0	614	8.6	640	9.3	665	10.0	690	10.7
14000	609	9.3	634	10.0	658	10.7	683	11.4	707	12.2
15000	631	10.8	655	11.6	679	12.3	702	13.1	724	13.9
16000	654	12.5	677	13.2	700	14.1	722	14.8	743	15.6
17000	678	14.3	701	15.1	722	16.0	742	16.8	763	17.6
18000	703	16.4	724	17.2	744	18.1	764	19.0	785	19.8

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	2.2		2.4		2.6		2.8		3.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	654	6.0	681	6.5	706	7.0	729	7.6	752	8.1
9000	664	6.8	691	7.4	715	8.0	738	8.5	761	9.1
10000	675	7.8	701	8.4	725	9.0	748	9.6	771	10.2
11000	687	8.8	712	9.5	735	10.2	758	10.8	781	11.4
12000	700	10.1	723	10.7	747	11.4	770	12.2	793	12.9
13000	714	11.4	737	12.2	760	12.9	782	13.7	805	14.4
14000	729	13.0	752	13.8	774	14.5	796	15.2	817	16.0
15000	746	14.6	768	15.4	790	16.2	811	17.0	831	17.9
16000	764	16.5	786	17.3	807	18.2	826	19.0	846	19.8
17000	784	18.5	805	19.4	824	20.3	843	21.1	863	22.1
18000	805	20.7	824	21.6	843	22.6	862	23.5	881	24.5

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	3.2		3.4		3.6		3.8		4.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	774	8.7	797	9.2	817	9.9	837	10.4	857	11.0
9000	784	9.8	806	10.3	826	10.9	846	11.6	866	12.2
10000	794	10.8	815	11.6	836	12.2	856	12.9	876	13.5
11000	804	12.2	824	12.8	845	13.5	865	14.3	886	14.9
12000	814	13.5	835	14.3	855	15.0	876	15.8	896	16.5
13000	825	15.1	846	15.9	866	16.6	886	17.4	906	18.2
14000	837	16.8	858	17.6	878	18.4	898	19.2	917	20.1
15000	851	18.7	871	19.5	891	20.4	910	21.2	928	22.1
16000	866	20.7	886	21.5	905	22.5	923	23.3	941	24.3
17000	882	23.0	901	23.8	919	24.8	937	25.7	-	-
18000	900	25.4	-	-	-	-	-	-	-	-

1. Fan performance is based on wet evaporator coils, clean 2” throwaway filters and system/cabinet effects at standard air density and 0 feet elevation.
2. Refer to Tables 12, 18, 23 and 42 for component additions and deductions to fan performance tables.
3. BHP includes drive losses.
4. **Shaded RPMs require Class II blower.**



A - Standard Unit

Note: Standard Unit includes wet evaporator coil, clean 2" throwaway filters, system and cabinet effects at standard air density and 0' elevation.

FIGURE 24 - FAN PERFORMANCE - 40 TON

TABLE 40: FAN PERFORMANCE - 25 & 30 TON AIRFOIL[1,2]

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	595	0.3	667	0.5	735	0.6	800	0.8	862	1.0
5000	709	0.6	769	0.7	827	0.9	882	1.1	935	1.3
6000	827	0.9	879	1.1	929	1.3	977	1.5	1024	1.7
7000	948	1.3	995	1.6	1038	1.8	1081	2.0	1122	2.3
8000	1072	1.9	1113	2.2	1151	2.4	1190	2.7	1227	2.9
9000	1197	2.7	1233	2.9	1268	3.2	1303	3.5	1336	3.8
10000	1322	3.6	1354	3.9	1387	4.2	1418	4.5	1449	4.8
11000	1447	4.7	1478	5.0	1508	5.3	1536	5.7	1565	6.1
12000	1574	6.0	1602	6.4	1629	6.7	1656	7.1	1682	7.5
13000	1701	7.6	1726	7.9	1752	8.3	1777	8.7	1802	9.1
14000	1828	9.4	1852	9.8	1875	10.2	1899	10.6	1922	11.1
15000	1955	11.5	1978	11.9	2000	12.4	2022	12.8	2043	13.2

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	921	1.1	978	1.3	1032	1.5	1085	1.7	1135	1.9
5000	988	1.5	1037	1.7	1087	1.9	1134	2.1	1180	2.4
6000	1070	1.9	1114	2.2	1158	2.4	1201	2.7	1242	2.9
7000	1163	2.5	1203	2.8	1241	3.0	1280	3.3	1318	3.6
8000	1263	3.2	1300	3.5	1335	3.8	1369	4.1	1404	4.4
9000	1370	4.1	1403	4.4	1434	4.7	1466	5.0	1498	5.4
10000	1480	5.1	1510	5.5	1539	5.8	1569	6.2	1598	6.5
11000	1593	6.4	1621	6.8	1648	7.1	1675	7.5	1702	7.8
12000	1709	7.8	1734	8.2	1760	8.6	1785	9.0	1810	9.4
13000	1826	9.6	1850	10.0	1874	10.4	1898	10.8	1921	11.2
14000	1944	11.5	1967	11.9	1990	12.4	2012	12.8	2034	13.3
15000	2065	13.7	2086	14.2	2107	14.7	2128	15.1	2149	15.6

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	2.2		2.4		2.6		2.8		3.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	1184	2.2	1231	2.4	1277	2.6	1321	2.8	1364	3.1
5000	1225	2.6	1269	2.9	1312	3.1	1353	3.4	1395	3.6
6000	1283	3.2	1323	3.4	1362	3.7	1402	4.0	1439	4.3
7000	1355	3.9	1392	4.1	1427	4.4	1463	4.7	1498	5.0
8000	1438	4.7	1471	5.0	1504	5.3	1537	5.7	1569	6.0
9000	1529	5.7	1559	6.0	1590	6.4	1620	6.7	1649	7.1
10000	1626	6.9	1654	7.2	1683	7.6	1710	7.9	1738	8.3
11000	1728	8.2	1755	8.6	1781	9.0	1807	9.4	1832	9.8
12000	1835	9.8	1859	10.2	1884	10.6	1908	11.1	1932	11.5
13000	1944	11.7	1967	12.1	1990	12.5	2012	13.0	2035	13.4
14000	2055	13.7	2077	14.2	2099	14.7	2120	15.1	2141	15.6
15000	2169	16.1	2190	16.6	2210	17.1	2230	17.6	2250	18.1

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	3.2		3.4		3.6		3.8		4.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	1407	3.3	1447	3.6	1487	3.8	1525	4.1	1563	4.4
5000	1434	3.9	1473	4.2	1512	4.4	1549	4.7	1586	5.0
6000	1476	4.6	1513	4.9	1549	5.1	1584	5.5	1619	5.8
7000	1532	5.4	1566	5.7	1600	6.0	1633	6.3	1666	6.7
8000	1601	6.3	1632	6.7	1663	7.0	1694	7.3	1724	7.7
9000	1679	7.4	1708	7.8	1737	8.1	1765	8.5	1794	8.9
10000	1765	8.7	1792	9.1	1819	9.5	1846	9.9	1872	10.3
11000	1858	10.2	1883	10.6	1908	11.0	1933	11.4	1957	11.9
12000	1955	11.9	1979	12.4	2003	12.8	2026	13.2	2049	13.7
13000	2057	13.9	2079	14.3	2102	14.8	2123	15.2	2145	15.7
14000	2162	16.1	2183	16.6	2204	17.1	2225	17.6	2245	18.1
15000	2270	18.6	2290	19.1	2310	19.6	2329	20.1	2348	20.6

TABLE 40: FAN PERFORMANCE - 25 & 30 TON AIRFOIL[1,2](CONTINUED)

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	4.2		4.4		4.6		4.8		5.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	1601	4.6	1636	4.9	1672	5.2	1707	5.5	1740	5.8
5000	1621	5.3	1656	5.6	1691	5.9	1725	6.2	1758	6.5
6000	1653	6.1	1687	6.4	1720	6.7	1753	7.0	1785	7.4
7000	1698	7.0	1730	7.3	1761	7.7	1792	8.0	1822	8.4
8000	1754	8.0	1784	8.4	1814	8.8	1843	9.1	1872	9.5
9000	1822	9.3	1850	9.7	1877	10.0	1905	10.4	1932	10.8
10000	1898	10.7	1924	11.1	1950	11.5	1976	11.9	2001	12.3
11000	1982	12.3	2006	12.7	2030	13.1	2054	13.6	2078	14.0
12000	2072	14.1	2095	14.6	2117	15.0	2140	15.5	2162	15.9
13000	2167	16.2	2188	16.7	2210	17.2	2231	17.7	2252	18.2
14000	2265	18.6	2286	19.1	2306	19.6	2326	20.1	2346	20.6
15000	2368	21.1	2387	21.7	2406	22.2	2425	22.8	2444	23.3

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	5.2		5.4		5.6		5.8		6.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
4000	1774	6.1	1807	6.4	1838	6.7	1870	7.0	1902	7.3
5000	1791	6.8	1823	7.1	1855	7.5	1886	7.8	1917	8.1
6000	1817	7.7	1847	8.0	1878	8.4	1909	8.7	1938	9.1
7000	1853	8.7	1883	9.1	1912	9.4	1941	9.8	1970	10.2
8000	1901	9.9	1928	10.2	1956	10.6	1984	11.0	2012	11.4
9000	1958	11.2	1985	11.6	2012	12.0	2038	12.4	2064	12.8
10000	2026	12.7	2051	13.1	2076	13.6	2101	14.0	2125	14.4
11000	2102	14.5	2126	14.9	2149	15.3	2172	15.8	2196	16.3
12000	2185	16.4	2207	16.9	2229	17.4	2251	17.9	2273	18.3
13000	2273	18.6	2294	19.1	2315	19.6	2336	20.1	2356	20.6
14000	2366	21.1	2386	21.6	2406	22.1	2425	22.6	2445	23.2
15000	2463	23.8	2482	24.4	2501	24.9				

1. Fan performance is based on wet evaporator coils, clean 2" throwaway filters and system/cabinet effects at standard air density and 0 feet elevation.
2. Refer to Tables 10, 12, 15, 18, 21, 23 and 42 for component additions and deductions to fan performance tables.
3. BHP includes drive losses.
4. **Shaded RPMs require Class II blower.**

TABLE 41: FAN PERFORMANCE - 40 TON AIRFOIL[1,2]

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	769	1.4	814	1.6	856	1.9	898	2.2	937	2.4
9000	855	1.8	896	2.1	933	2.4	971	2.7	1008	3.1
10000	941	2.5	978	2.8	1013	3.1	1047	3.4	1081	3.8
11000	1029	3.2	1062	3.5	1095	3.9	1126	4.3	1157	4.6
12000	1117	4.1	1147	4.5	1177	4.8	1207	5.2	1236	5.6
13000	1205	5.1	1233	5.5	1261	5.9	1289	6.4	1316	6.8
14000	1294	6.3	1320	6.8	1346	7.2	1372	7.7	1397	8.1
15000	1382	7.7	1407	8.2	1431	8.6	1455	9.1	1479	9.6
16000	1471	9.2	1495	9.8	1518	10.3	1540	10.8	1563	11.3
17000	1560	11.0	1582	11.6	1604	12.1	1625	12.6	1647	13.2
18000	1649	13.0	1670	13.6	1691	14.2	1712	14.7	1732	15.3
19000	1739	15.2	1758	15.8	1778	16.4	1798	17.1	1817	17.7
20000	1828	17.7	1847	18.3	1866	19.0	1884	19.6	1903	20.3
21000	1918	20.4	1936	21.1	1953	21.7	1971	22.4	1989	23.1
22000	2008	23.4	2025	24.1	2042	24.8				

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	975	2.7	1013	3.0	1049	3.3	1085	3.6	1120	4.0
9000	1043	3.4	1077	3.7	1111	4.0	1144	4.4	1177	4.7
10000	1114	4.1	1146	4.5	1177	4.8	1208	5.2	1238	5.6
11000	1188	5.0	1218	5.4	1247	5.8	1276	6.2	1305	6.6
12000	1264	6.1	1292	6.5	1320	6.9	1346	7.3	1373	7.7
13000	1342	7.2	1368	7.7	1395	8.1	1420	8.6	1445	9.0
14000	1422	8.6	1446	9.1	1471	9.5	1495	10.0	1519	10.5
15000	1503	10.1	1526	10.6	1549	11.1	1572	11.6	1595	12.1
16000	1585	11.8	1607	12.4	1629	12.9	1650	13.4	1672	14.0
17000	1668	13.8	1689	14.3	1710	14.9	1730	15.4	1750	16.0
18000	1751	15.9	1771	16.5	1791	17.1	1811	17.7	1830	18.3
19000	1836	18.3	1855	18.9	1874	19.5	1893	20.1	1911	20.8
20000	1921	20.9	1939	21.5	1957	22.2	1975	22.9	1993	23.5
21000	2007	23.8	2024	24.5						
22000										

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	2.2		2.4		2.6		2.8		3.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	1154	4.3	1188	4.6	1220	4.9	1252	5.3	1284	5.6
9000	1209	5.0	1240	5.4	1270	5.8	1301	6.1	1330	6.5
10000	1268	6.0	1298	6.3	1326	6.7	1355	7.1	1383	7.5
11000	1332	7.0	1359	7.4	1387	7.8	1414	8.2	1440	8.6
12000	1400	8.1	1425	8.6	1451	9.0	1476	9.4	1502	9.9
13000	1470	9.5	1494	9.9	1518	10.4	1542	10.8	1566	11.3
14000	1542	10.9	1565	11.4	1588	11.9	1611	12.4	1633	12.9
15000	1617	12.6	1638	13.1	1660	13.7	1682	14.2	1704	14.7
16000	1693	14.5	1714	15.0	1734	15.6	1755	16.1	1775	16.7
17000	1770	16.6	1791	17.2	1810	17.7	1830	18.3	1849	18.9
18000	1849	18.9	1868	19.5	1887	20.1	1906	20.7	1925	21.3
19000	1929	21.4	1947	22.0	1965	22.7	1984	23.3	2002	24.0
20000	2010	24.2	2027	24.8						

TABLE 41: FAN PERFORMANCE - 40 TON AIRFOIL[1,2](CONTINUED)

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	3.2		3.4		3.6		3.8		4.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	1315	6.0	1345	6.4	1375	6.7	1405	7.1	1433	7.4
9000	1360	6.9	1389	7.3	1417	7.6	1445	8.0	1472	8.4
10000	1411	7.9	1438	8.3	1464	8.7	1491	9.1	1517	9.5
11000	1466	9.0	1492	9.5	1517	9.9	1542	10.3	1567	10.8
12000	1526	10.3	1550	10.8	1575	11.2	1599	11.7	1622	12.2
13000	1590	11.8	1613	12.3	1635	12.7	1658	13.2	1681	13.7
14000	1656	13.4	1678	13.9	1700	14.4	1721	14.9	1743	15.5
15000	1725	15.2	1745	15.8	1766	16.3	1787	16.9	1808	17.4
16000	1796	17.3	1816	17.8	1835	18.4	1855	19.0	1875	19.5
17000	1868	19.5	1888	20.1	1907	20.6	1926	21.2	1944	21.8
18000	1943	21.9	1961	22.5	1980	23.2	1998	23.8	2016	24.4
19000	2019	24.6								
20000										

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	4.2		4.4		4.6		4.8		5.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	1462	7.8	1490	8.2	1518	8.6	1545	9.0	1572	9.4
9000	1500	8.8	1526	9.2	1553	9.6	1579	10.0	1605	10.4
10000	1543	9.9	1569	10.4	1594	10.8	1619	11.2	1644	11.7
11000	1592	11.2	1617	11.7	1640	12.1	1664	12.6	1688	13.0
12000	1645	12.6	1669	13.1	1692	13.6	1715	14.1	1737	14.6
13000	1703	14.2	1725	14.7	1747	15.2	1769	15.7	1791	16.2
14000	1764	16.0	1785	16.5	1806	17.1	1827	17.6	1847	18.1
15000	1828	18.0	1848	18.5	1868	19.1	1888	19.6	1908	20.2
16000	1895	20.1	1914	20.7	1933	21.2	1952	21.8	1971	22.4
17000	1963	22.5	1981	23.1	2000	23.7	2018	24.3	2036	24.9
18000	2033	25.0								

AIRFLOW (CFM)	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	5.2		5.4		5.6		5.8		6.0	
	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]	RPM	BHP[3]
8000	1599	9.8	1624	10.2	1650	10.6	1675	11.0	1701	11.4
9000	1630	10.9	1655	11.3	1680	11.7	1705	12.2	1729	12.6
10000	1668	12.1	1692	12.6	1716	13.0	1740	13.5	1763	13.9
11000	1712	13.5	1734	14.0	1757	14.5	1780	14.9	1803	15.4
12000	1759	15.0	1782	15.5	1804	16.0	1825	16.6	1847	17.1
13000	1812	16.8	1833	17.3	1854	17.8	1875	18.4	1896	18.9
14000	1868	18.7	1888	19.2	1908	19.8	1928	20.3	1948	20.8
15000	1927	20.7	1947	21.3	1966	21.9	1985	22.5	2004	23.0
16000	1990	23.0	2008	23.6	2027	24.2	2045	24.8		
17000										
18000										

1. Fan performance is based on wet evaporator coils, clean 2" throwaway filters and system/cabinet effects at standard air density and 0 feet elevation.
2. Refer to Tables 10, 12, 15, 18, 21, 23 and 42 for component additions and deductions to fan performance tables.
3. BHP includes drive losses.
4. **Shaded RPMs require Class II blower.**

TABLE 42: COMPONENT STATIC RESISTANCE[1, 2]

COMPONENT COIL LOSSES	CFM						
	6,000	8,000	10,000	12,000	14,000	16,000	18,000
STD. 25 TON, DRY	-0.06	-0.08	-0.10	-0.13	-	-	-
STD. 25 TON, WET	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
STD. 30 TON, DRY	-0.045	-0.075	-0.112	-0.157	-0.207	-0.264	-0.326
STD. 30 TON, WET	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
HI CAP 30 TON, DRY	-0.019	-0.035	-0.052	-0.073	-0.098	-0.124	-0.155
HI CAP 30 TON, WET	0.042	0.069	0.103	0.142	0.186	0.236	0.290
STD. 40 TON, DRY	-0.030	-0.051	-0.076	-0.106	-0.140	-0.177	-0.219
STD. 40 TON, WET	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
HI CAP 40 TON, DRY	-0.020	-0.033	-0.050	-0.069	-0.092	-0.116	-0.144
HI CAP 40 TON, WET	0.023	0.038	0.057	0.079	0.105	0.133	0.164
FILTER LOSSES							
2" TA OR HI EFF.	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
RIGID 6", 65%	0.048	0.080	0.119	0.165	0.217	0.274	0.338
RIGID 6", 95%	0.189	0.308	0.448	0.609	0.790	0.988	1.205
IGV LOSSES							
25 & 30 TON	0.048	0.085	0.132	0.190	0.259	0.338	0.428
40 TON	0.027	0.049	0.076	0.110	0.149	0.195	0.246
GAS HEAT							
267 MBH HEAT	0.106	0.141	0.177	0.212	0.247	0.283	0.318
533 MBH HEAT	0.212	0.283	0.353	0.424	0.495	0.566	0.636
800 MBH HEAT	0.318	0.423	0.531	0.636	0.741	0.849	0.954
ELECTRIC HEAT	0.050	0.100	0.150	0.310	0.430	0.530	0.680
ECONOMIZER	0.063	0.104	0.153	0.210	0.276	0.349	0.429
POWER EXHAUST	0.046	0.081	0.127	0.182	0.248	0.324	0.410

1. Baseline losses based on system/cabinet effects, wet standard coil and 2" throwaway filters at 70°F, 0 feet elevation with standard air.
2. See Tables 10, 12, 15, 18, 21 and 23 for hot water and steam water coil static resistance.

TABLE 43: POWER EXHAUST - ONE FORWARD CURVED FAN 25 TON[1]

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP[2]	RPM	BHP[2]	RPM	BHP[2]	RPM	BHP[2]	RPM	BHP[2]
4000	442	0.66	496	0.78	562	0.91	626	1.05	687	1.22
5000	524	1.21	566	1.35	609	1.50	663	1.66	717	1.83
6000	612	1.93	646	2.18	679	2.36	717	2.55	762	2.73
7000	703	3.00	731	3.32	759	3.54	787	3.75	820	3.97
8000	791	3.81	821	4.29	844	4.77	868	5.24	892	5.49
9000	877	5.81	911	6.17	932	6.53	953	6.90	974	7.27
10000	967	8.42	1004	8.76	1022	9.09	1041	9.43	1059	9.77

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP[2]	RPM	BHP[2]	RPM	BHP[2]	RPM	BHP[2]	RPM	BHP[2]
4000	743	1.39	799	1.54	850	1.74	900	1.93	948	2.14
5000	768	2.00	818	2.18	865	2.39	911	2.60	955	2.81
6000	806	2.92	850	3.10	895	3.33	937	3.57	978	3.80
7000	857	4.18	895	4.40	933	4.61	972	4.83	1010	5.04
8000	921	5.74	953	6.00	985	6.25	1018	6.50	1052	6.75
9000	995	7.63	1020	7.97	1048	8.25	1075	8.54	1103	8.81
10000	1077	10.10	1096	10.44	-	-	-	-	-	-

1. Fan performance is based on system/cabinet effects and back draft damper effects at standard air density and 0 feet elevation.
2. BHP includes 5% drive losses.

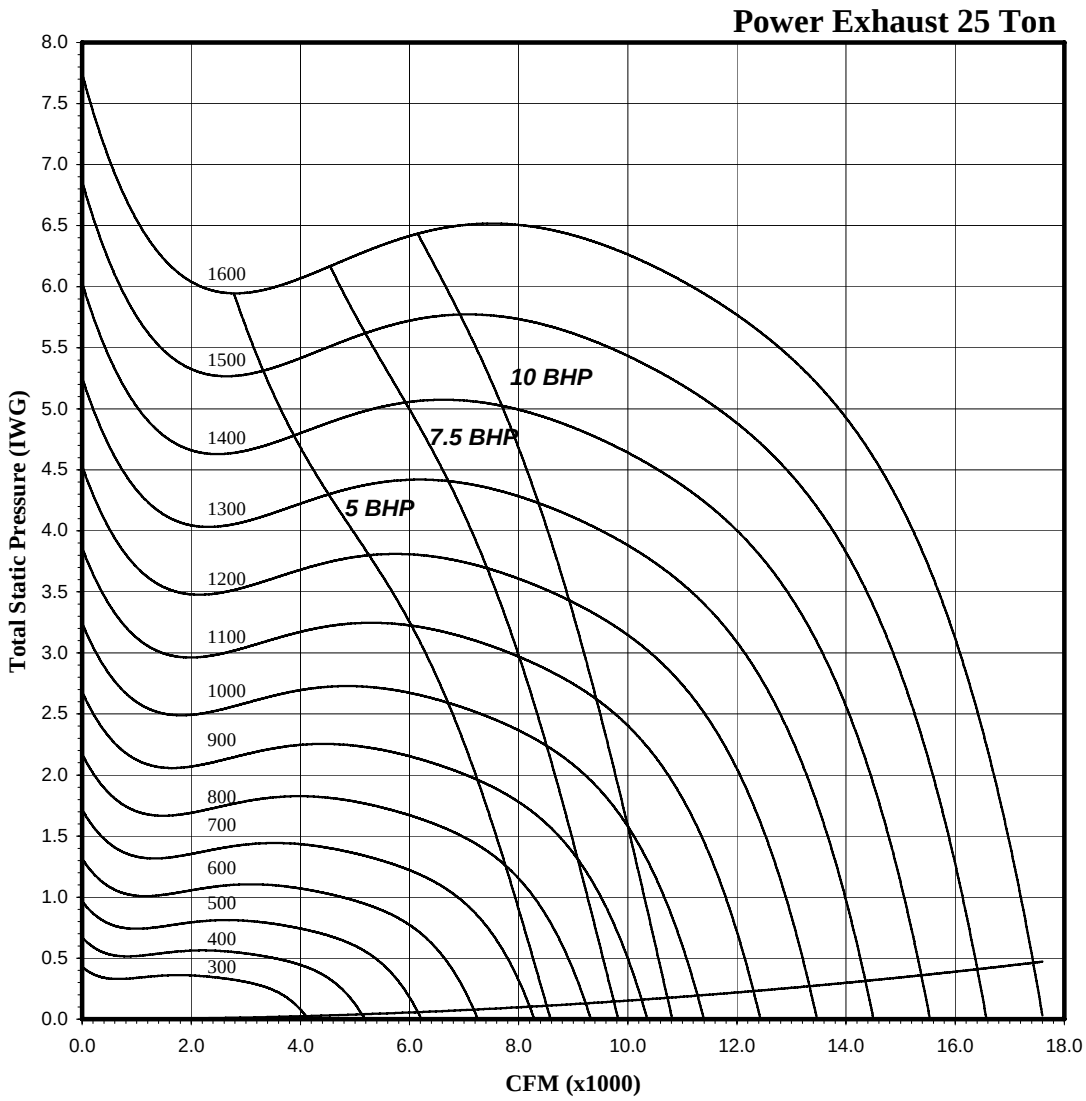


FIGURE 25 - POWER EXHAUST - ONE FORWARD CURVE FAN - 25 TONS

TABLE 44: POWER EXHAUST - TWO FORWARD CURVED FANS - 30 & 40 TON[1]

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	0.2		0.4		.06		0.8		1.0	
	RPM	BHP[2 3]	RPM	BHP[2 3]	RPM	BHP[2 3]	RPM	BHP[2 3]	RPM	BHP[2 3]
4000	363	0.32	468	0.53	560	0.74	641	0.95	716	1.16
5000	402	0.53	494	0.74	576	1.05	652	1.26	722	1.47
6000	445	0.84	527	1.05	602	1.37	670	1.68	735	2.00
7000	494	1.26	565	1.58	633	1.79	697	2.10	757	2.52
8000	544	1.79	609	2.10	670	2.42	729	2.73	784	3.15
9000	597	2.42	654	2.84	711	3.15	765	3.47	817	3.89
10000	651	3.26	703	3.68	754	3.99	805	4.41	853	4.83
11000	705	4.31	753	4.73	801	5.15	847	5.57	893	5.99
12000	761	5.46	805	5.88	849	6.30	893	6.83	934	7.25
13000	817	6.93	858	7.35	899	7.77	939	8.30	979	8.82
14000	874	8.51	912	9.03	950	9.56	988	9.98	1025	10.50
15000	932	10.40	967	10.92	1002	11.55	1037	12.08	1072	12.60
16000	989	12.60	1022	13.23	1055	13.76	1088	14.28	-	-

AIRFLOW CFM	AVAILABLE EXTERNAL STATIC PRESSURE (IWG)									
	1.2		1.4		1.6		1.8		2	
	RPM	BHP[2 3]	RPM	BHP[2 3]	RPM	BHP[2 3]	RPM	BHP[2 3]	RPM	BHP[2 3]
4000	783	1.47	844	1.68	903	1.89	956	2.21	1008	2.42
5000	788	1.79	848	2.10	906	2.42	959	2.63	1011	2.94
6000	798	2.21	855	2.63	911	2.94	963	3.26	1014	3.57
7000	814	2.84	869	3.15	922	3.47	972	3.89	1021	4.20
8000	837	3.47	889	3.89	938	4.20	987	4.62	1033	5.04
9000	866	4.31	915	4.73	961	5.15	1007	5.57	1050	5.99
10000	900	5.25	945	5.67	989	6.20	1032	6.62	1073	7.14
11000	936	6.41	979	6.93	1020	7.35	1061	7.88	1101	8.30
12000	976	7.77	1016	8.30	1055	8.72	1094	9.24	1131	9.77
13000	1018	9.35	1055	9.87	1093	10.40	1129	10.92	1165	11.55
14000	1061	11.13	1098	11.66	1133	12.29	1167	12.92	1202	13.44
15000	1107	13.23	1141	13.76	1175	14.39	1208	14.91	1240	15.54

1. Fan performance is based on system/cabinet effects and back draft damper effects at standard air density and 0 feet elevation.
2. BHP includes the sum of both exhaust fan motors.
3. BHP does includes 5% drive losses.

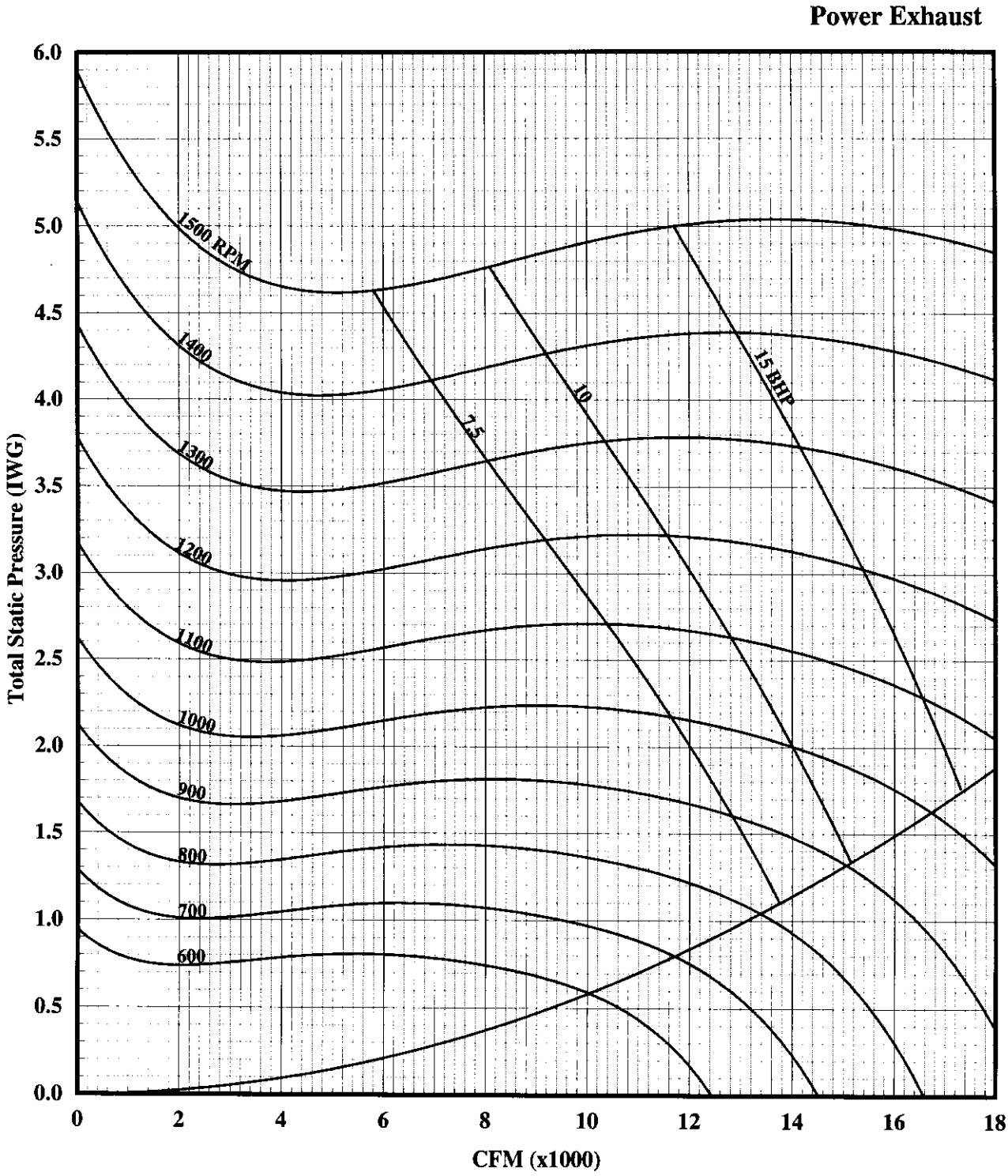


FIGURE 26 - POWER EXHAUST - TWO FORWARD CURVED FANS - 30 & 40 TONS

TABLE 45: ELECTRICAL DATA 25 TON BASIC UNIT R22

VOLTAGE	COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA		
208-3-60	2	42.3	245	66.0	4	3.8	7.5	24.2	137	175
							10	30.8	144	175
							15	46.2	160	200
							20	59.4	177	225
230-3-60	2	42.3	245	66.0	4	3.8	7.5	22.0	134	150
							10	28.0	140	175
							15	42.0	154	175
							20	54.0	169	200
460-3-60	2	17.6	125	27.5	4	1.9	7.5	11.0	59	70
							10	14.0	62	70
							15	21.0	70	90
							20	27.0	78	100
575-3-60	2	14.2	100	22.2	4	1.5	7.5	9.0	48	60
							10	11.0	50	60
							15	17.0	56	70
							20	22.0	63	80

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 46: ELECTRICAL DATA 30 TON BASIC UNIT R22

VOLTAGE	COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA		
208-3-60	3	37.2	239	58.0	3	4.5	10	30.8	165	200
							15	46.2	183	225
							20	59.4	199	250
							25	74.8	219	250
230-3-60	3	37.2	239	58.0	3	4.5	10	28.0	162	175
							15	42.0	177	200
							20	54.0	192	225
							25	68.0	210	250
460-3-60	3	17.2	125	27.0	3	2.2	10	14.0	76	90
							15	21.0	84	100
							20	27.0	92	110
							25	34.0	101	125
575-3-60	3	12.4	80	19.3	3	1.7	10	11.0	56	60
							15	17.0	64	80
							20	22.0	70	90
							25	27.0	76	100

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 47: ELECTRICAL DATA 40 TON BASIC UNIT R22

Voltage	Compressors (each)				OD Fan Motors (each)		Supply Blower		MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Qty.	RLA	LRA	MCC	Qty	FLA	HP	FLA		
208-3-60	4	37.2	239	58.0	4	4.5	10	30.8	207	225
							15	46.2	225	250
							20	59.4	241	250
							25	74.8	260	300
230-3-60	4	37.2	239	58.0	4	4.5	10	28.0	203	225
							15	42.0	219	250
							20	54.0	234	250
							25	68.0	251	300
460-3-60	4	17.2	125	27.0	4	2.2	10	14.0	96	110
							15	21.0	104	110
							20	27.0	111	125
							25	34.0	120	150
575-3-60	4	12.4	80	19.3	4	1.7	10	11.0	71	80
							15	17.0	78	90
							20	22.0	84	100
							25	27.0	90	110

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 48: ELECTRICAL DATA 25 TON WITH ELECTRIC HEAT R22

VOLTAGE	COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		ELECTRIC HEAT				MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	OPTION	KW	APPLIED KW	STAGES		
208-3-60	2	42.3	245	66.0	4	3.8	7.5	24.2	E4	40	30	1	137	175
							10	30.8	E4	40	30	1	144	175
							15	46.2	E4	40	30	1	162	200
							20	59.4	E4	40	30	1	178	225
							7.5	24.2	E8	80	60	2	197	225
							10	30.8	E8	80	60	2	205	225
							15	46.2	E8	80	60	2	225	250
							20	59.4	E8	80	60	2	241	300
230-3-60	2	42.3	245	66.0	4	3.8	7.5	22.0	E4	40	36.8	1	148	175
							10	28.0	E4	40	36.8	1	155	175
							15	42.0	E4	40	36.8	1	173	175
							20	54.0	E4	40	36.8	1	188	200
							7.5	22.0	E8	80	73.6	2	220	250
							10	28.0	E8	80	73.6	2	227	250
							15	42.0	E8	80	73.6	2	245	250
							20	54.0	E8	80	73.6	2	260	300
460-3-60	2	17.6	125	27.5	4	1.9	7.5	11.0	E4	40	36.8	1	74	80
							10	14.0	E4	40	36.8	1	78	80
							15	21.0	E4	40	36.8	1	86	90
							20	27.0	E4	40	36.8	1	94	110
							7.5	11.0	E8	80	73.6	2	110	125
							10	14.0	E8	80	73.6	2	114	125
							15	21.0	E8	80	73.6	2	122	125
							20	27.0	E8	80	73.6	2	130	150
							7.5	11.0	E1	108	99.4	2	144	175
							10	14.0	E1	108	99.4	2	147	175
							15	21.0	E1	108	99.4	2	156	175
							20	27.0	E1	108	99.4	2	164	175
575-3-60	2	14.2	100	22.2	4	1.5	7.5	9.0	E4	40	36.8	1	59	60
							10	11.0	E4	40	36.8	1	62	70
							15	17.0	E4	40	36.8	1	69	70
							20	22.0	E4	40	36.8	1	76	80
							7.5	9.0	E8	80	73.6	2	88	100
							10	11.0	E8	80	73.6	2	91	100
							15	17.0	E8	80	73.6	2	98	110
							20	22.0	E8	80	73.6	2	104	125
							7.5	9.0	E1	108	99.4	2	115	125
							10	11.0	E1	108	99.4	2	118	150
							15	17.0	E1	108	99.4	2	125	150
							20	22.0	E1	108	99.4	2	131	150

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 49: ELECTRICAL DATA 30 TON WITH ELECTRIC HEAT R22

Voltage	Compressors (each)				OD Fan Motors (each)		Supply Blower		Electric Heat				MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Qty.	RLA	LRA	MCC	QTY	FLA	HP	FLA	Option	kW	Applied kW	Stages		
208-3-60	3	37.2	239	58.0	3	4.5	10	30.8	E4	40	30	1	165	200
							15	46.2	E4	40	30	1	183	225
							20	59.4	E4	40	30	1	199	250
							25	74.8	E4	40	30	1	219	250
							10	30.8	E8	80	60	2	205	225
							15	46.2	E8	80	60	2	225	250
							20	59.4	E8	80	60	2	241	300
							25	74.8	E8	80	60	2	260	300
230-3-60	3	37.2	239	58.0	3	4.5	10	28.0	E4	40	36.8	1	162	175
							15	42.0	E4	40	36.8	1	177	200
							20	54.0	E4	40	36.8	1	192	225
							25	68.0	E4	40	36.8	1	210	250
							10	28.0	E8	80	73.6	2	227	250
							15	42.0	E8	80	73.6	2	245	250
							20	54.0	E8	80	73.6	2	260	300
							25	68.0	E8	80	73.6	2	277	300
460-3-60	3	17.2	125	27.0	3	2.2	10	14.0	E4	40	36.8	1	78	90
							15	21.0	E4	40	36.8	1	86	100
							20	27.0	E4	40	36.8	1	94	110
							25	34.0	E4	40	36.8	1	103	125
							10	14.0	E8	80	73.6	2	114	125
							15	21.0	E8	80	73.6	2	122	125
							20	27.0	E8	80	73.6	2	130	150
							25	34.0	E8	80	73.6	2	139	150
							10	14.0	E1	108	99.4	2	147	175
							15	21.0	E1	108	99.4	2	156	175
							20	27.0	E1	108	99.4	2	164	175
							25	34.0	E1	108	99.4	2	172	200
575-3-60	3	12.4	80	19.3	3	1.7	10	11.0	E4	40	36.8	1	62	70
							15	17.0	E4	40	36.8	1	69	80
							20	22.0	E4	40	36.8	1	76	90
							25	27.0	E4	40	36.8	1	82	100
							10	11.0	E8	80	73.6	2	91	100
							15	17.0	E8	80	73.6	2	98	110
							20	22.0	E8	80	73.6	2	104	125
							25	27.0	E8	80	73.6	2	111	125
							10	11.0	E1	108	99.4	2	118	150
							15	17.0	E1	108	99.4	2	125	150
							20	22.0	E1	108	99.4	2	131	150
							25	27.0	E1	108	99.4	2	138	150

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 50: ELECTRICAL DATA 40 TON WITH ELECTRIC HEAT R22

VOLTAGE	COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		ELECTRIC HEAT				MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	OPTION	KW	APPLIED KW	STAGES		
208-3-60	4	37.2	239	58.0	4	4.5	10	30.8	E4	40	30.0	1	207	225
							15	46.2	E4	40	30.0	1	225	250
							20	59.4	E4	40	30.0	1	241	300
							25	74.8	E4	40	30.0	1	260	300
							10	30.8	E8	80	60.1	2	207	225
							15	46.2	E8	80	60.1	2	225	250
							20	59.4	E8	80	60.1	2	241	300
							25	74.8	E8	80	60.1	2	260	300
230-3-60	4	37.2	239	58.0	4	4.5	10	28.0	E4	40	36.8	1	203	225
							15	42.0	E4	40	36.8	1	219	250
							20	54.0	E4	40	36.8	1	234	250
							25	68.0	E4	40	36.8	1	251	300
							10	28.0	E8	80	73.6	2	227	250
							15	42.0	E8	80	73.6	2	245	250
							20	54.0	E8	80	73.6	2	260	300
							25	68.0	E8	80	73.6	2	277	300
460-3-60	4	17.2	125	27.0	4	2.2	10	14.0	E4	40	36.8	1	96	110
							15	21.0	E4	40	36.8	1	104	110
							20	27.0	E4	40	36.8	1	111	125
							25	34.0	E4	40	36.8	1	120	150
							10	14.0	E8	80	73.6	2	114	125
							15	21.0	E8	80	73.6	2	122	125
							20	27.0	E8	80	73.6	2	130	150
							25	34.0	E8	80	73.6	2	139	150
							10	14.0	E1	108	99.4	2	147	175
							15	21.0	E1	108	99.4	2	156	175
							20	27.0	E1	108	99.4	2	164	175
							25	34.0	E1	108	99.4	2	172	200
575-3-60	4	12.4	80	19.3	4	1.7	10	11.0	E4	40	36.8	1	71	80
							15	17.0	E4	40	36.8	1	78	90
							20	22.0	E4	40	36.8	1	84	100
							25	27.0	E4	40	36.8	1	90	110
							10	11.0	E8	80	73.6	2	91	100
							15	17.0	E8	80	73.6	2	98	110
							20	22.0	E8	80	73.6	2	104	125
							25	27.0	E8	80	73.6	2	111	125
							10	11.0	E1	108	99.4	2	118	150
							15	17.0	E1	108	99.4	2	125	150
							20	22.0	E1	108	99.4	2	131	150
							25	27.0	E1	108	99.4	2	138	150

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 51: ELECTRICAL DATA 25 TON WITH POWER EXHAUST R22

Voltage	Compressors (each)				OD Fan Motors (each)		Supply Blower		Pwr Exh Motor		MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Qty.	RLA	LRA	MCC	Qty	FLA	HP	FLA	HP	FLA		
208-3-60	2	42.3	245	66.0	4	3.8	7.5	24.2	5	16.7	154	175
									7.5	24.2	161	200
									10	30.8	168	200
							10	30.8	5	16.7	160	200
									7.5	24.2	168	200
									10	30.8	175	200
							15	46.2	5	16.7	177	200
									7.5	24.2	184	225
									10	30.8	191	225
							20	59.4	5	16.7	193	250
									7.5	24.2	201	250
									10	30.8	207	250
230-3-60	2	42.3	245	66.0	4	3.8	7.5	22.0	5	15.2	149	175
									7.5	22.0	156	175
									10	28.0	162	200
							10	28.0	5	15.2	155	175
									7.5	22.0	162	200
									10	28.0	168	200
							15	42.0	5	15.2	169	200
									7.5	22.0	176	200
									10	28.0	182	200
							20	54.0	5	15.2	184	225
									7.5	22.0	191	225
									10	28.0	197	250
460-3-60	2	17.6	125	27.5	4	1.9	7.5	11.0	5	7.6	67	80
									7.5	11.0	70	80
									10	14.0	73	90
							10	14.0	5	7.6	70	80
									7.5	11.0	73	90
									10	14.0	76	90
							15	21.0	5	7.6	78	90
									7.5	11.0	81	100
									10	14.0	84	100
							20	27.0	5	7.6	85	110
									7.5	11.0	89	110
									10	14.0	92	110
575-3-60	2	14.2	100	22.2	4	1.5	7.5	9.0	5	6.1	54	60
									7.5	9.0	57	70
									10	11.0	59	70
							10	11.0	5	6.1	56	70
									7.5	9.0	59	70
									10	11.0	61	70
							15	17.0	5	6.1	63	70
									7.5	9.0	65	80
									10	11.0	67	80
							20	22.0	5	6.1	69	90
									7.5	9.0	72	90
									10	11.0	74	90

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 52: ELECTRICAL DATA 30 TON WITH POWER EXHAUST R22

VOLTAGE	COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
208-3-60	3	37.2	239	58.0	3	4.5	10	30.8	7.5	24.2	189	225
									10	30.8	196	225
									15	46.2	214	250
							15	46.2	7.5	24.2	207	250
									10	30.8	214	250
									15	46.2	229	250
							20	59.4	7.5	24.2	224	250
									10	30.8	230	250
									15	46.2	246	300
							25	74.8	7.5	24.2	243	300
									10	30.8	249	300
									15	46.2	265	300
230-3-60	3	37.2	239	58.0	3	4.5	10	28.0	7.5	22.0	184	200
									10	28.0	190	225
									15	42.0	205	225
							15	42.0	7.5	22.0	199	225
									10	28.0	205	225
									15	42.0	219	250
							20	54.0	7.5	22.0	214	250
									10	28.0	220	250
									15	42.0	234	250
							25	68.0	7.5	22.0	232	250
									10	28.0	238	300
									15	42.0	252	300
460-3-60	3	17.2	125	27.0	3	2.2	10	14.0	7.5	11.0	87	100
									10	14.0	90	100
									15	21.0	98	110
							15	21.0	7.5	11.0	95	110
									10	14.0	98	110
									15	21.0	105	125
							20	27.0	7.5	11.0	103	125
									10	14.0	106	125
									15	21.0	113	125
							25	34.0	7.5	11.0	112	125
									10	14.0	115	125
									15	21.0	122	150
575-3-60	3	12.4	80	19.3	3	1.7	10	11.0	7.5	9.0	65	70
									10	11.0	67	70
									15	17.0	75	90
							15	17.0	7.5	9.0	73	80
									10	11.0	75	90
									15	17.0	81	90
							20	22.0	7.5	9.0	79	100
									10	11.0	81	100
									15	17.0	87	100
							25	27.0	7.5	9.0	85	110
									10	11.0	87	110
									15	17.0	93	110

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 53: ELECTRICAL DATA 40 TON WITH POWER EXHAUST R22

VOLTAGE	COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
208-3-60	4	37.2	239	58.0	4	4.5	10	30.8	7.5	24.2	231	250
									10	30.8	238	250
									15	46.2	255	300
							15	46.2	7.5	24.2	249	250
									10	30.8	255	300
									15	46.2	271	300
							20	59.4	7.5	24.2	265	300
									10	30.8	272	300
									15	46.2	287	300
							25	74.8	7.5	24.2	285	350
									10	30.8	291	350
									15	46.2	307	350
230-3-60	4	37.2	239	58.0	4	4.5	10	28.0	7.5	22.0	225	250
									10	28.0	231	250
									15	42.0	247	250
							15	42.0	7.5	22.0	241	250
									10	28.0	247	250
									15	42.0	261	300
							20	54.0	7.5	22.0	256	300
									10	28.0	262	300
									15	42.0	276	300
							25	68.0	7.5	22.0	273	300
									10	28.0	279	300
									15	42.0	293	350
460-3-60	4	17.2	125	27.0	4	2.2	10	14.0	7.5	11.0	107	110
									10	14.0	110	125
									15	21.0	118	125
							15	21.0	7.5	11.0	115	125
									10	14.0	118	125
									15	21.0	125	125
							20	27.0	7.5	11.0	122	125
									10	14.0	125	150
									15	21.0	132	150
							25	34.0	7.5	11.0	131	150
									10	14.0	134	150
									15	21.0	141	150
575-3-60	4	12.4	80	19.3	4	1.7	10	11.0	7.5	9.0	80	90
									10	11.0	82	90
									15	17.0	89	100
							15	17.0	7.5	9.0	87	100
									10	11.0	89	100
									15	17.0	95	110
							20	22.0	7.5	9.0	93	110
									10	11.0	95	110
									15	17.0	101	110
							25	27.0	7.5	9.0	99	125
									10	11.0	101	125
									15	17.0	107	125

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 54: ELECTRICAL DATA 25 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22

VOLTAGE	ELECTRIC HEAT			COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	OPTION	KW	STAGES	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
208-3-60	E4	40	1	2	42.3	245	66.0	4	3.8	7.5	24.2	5	16.7	154	175
												7.5	24.2	161	200
												10	30.8	168	200
										10	30.8	5	16.7	160	200
												7.5	24.2	168	200
												10	30.8	175	200
										15	46.2	5	16.7	179	200
												7.5	24.2	186	225
												10	30.8	193	225
										20	59.4	5	16.7	195	250
												7.5	24.2	203	250
												10	30.8	209	250
	E8	80	2	2	42.3	245	66.0	4	3.8	7.5	24.2	5	16.7	214	225
												7.5	24.2	221	225
												10	30.8	229	250
										10	30.8	5	16.7	222	250
												7.5	24.2	229	250
												10	30.8	236	250
										15	46.2	5	16.7	241	250
												7.5	24.2	249	250
												10	30.8	255	300
										20	59.4	5	16.7	258	300
												7.5	24.2	265	300
												10	30.8	272	300
230-3-60	E4	40	1	2	42.3	245	66.0	4	3.8	7.5	22.0	5	15.2	163	175
												7.5	22.0	170	175
												10	28.0	177	200
										10	28.0	5	15.2	170	175
												7.5	22.0	177	200
												10	28.0	183	200
										15	42.0	5	15.2	188	200
												7.5	22.0	195	200
												10	28.0	201	225
										20	54.0	5	15.2	203	225
												7.5	22.0	210	225
												10	28.0	216	250
	E8	80	2	2	42.3	245	66.0	4	3.8	7.5	22.0	5	15.2	235	250
												7.5	22.0	242	250
												10	28.0	249	250
										10	28.0	5	15.2	243	250
												7.5	22.0	249	250
												10	28.0	255	300
										15	42.0	5	15.2	260	300
												7.5	22.0	267	300
												10	28.0	273	300
										20	54.0	5	15.2	275	300
												7.5	22.0	282	300
												10	28.0	288	300

TABLE 54: ELECTRICAL DATA 25 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22 (CONTINUED)

Voltage	Electric Heat			Compressors (each)				OD Fan Motors (each)		Supply Blower		Pwr Exh Motor		MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Option	kW	Stages	Qty.	RLA	LRA	MCC	Qty	FLA	HP	FLA	HP	FLA		
460-3-60	E4	40	1	2	17.6	125	27.5	4	1.9	7.5	11.0	5	7.6	81	90
												7.5	11.0	85	90
												10	14.0	89	90
										10	14.0	5	7.6	85	90
												7.5	11.0	89	90
												10	14.0	92	100
										15	21.0	5	7.6	94	100
												7.5	11.0	97	100
												10	14.0	100	110
										20	27.0	5	7.6	101	110
												7.5	11.0	105	110
												10	14.0	108	110
	E8	80	2	2	17.6	125	27.5	4	1.9	7.5	11.0	5	7.6	118	125
												7.5	11.0	121	125
												10	14.0	125	125
										10	14.0	5	7.6	121	125
												7.5	11.0	125	125
												10	14.0	128	150
										15	21.0	5	7.6	130	150
												7.5	11.0	133	150
												10	14.0	136	150
										20	27.0	5	7.6	138	150
												7.5	11.0	141	150
												10	14.0	144	150
	E1	108	2	2	17.6	125	27.5	4	1.9	7.5	11.0	5	7.6	151	175
												7.5	11.0	155	175
												10	14.0	158	175
										10	14.0	5	7.6	155	175
												7.5	11.0	158	175
												10	14.0	161	175
										15	21.0	5	7.6	164	175
												7.5	11.0	167	175
												10	14.0	170	175
										20	27.0	5	7.6	171	175
												7.5	11.0	175	200
												10	14.0	178	200

TABLE 54: ELECTRICAL DATA 25 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22 (CONTINUED)

VOLTAGE	ELECTRIC HEAT			COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	OPTION	KW	STAGES	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
575-3-60	E4	40	1	2	14.2	100	22.2	4	1.5	7.5	9.0	5	6.1	65	70
												7.5	9.0	68	70
												10	11.0	71	80
										10	11.0	5	6.1	68	70
												7.5	9.0	71	80
												10	11.0	73	80
										15	17.0	5	6.1	75	80
												7.5	9.0	78	80
												10	11.0	80	90
										20	22.0	5	6.1	82	90
												7.5	9.0	85	90
												10	11.0	87	90
	E8	80	2	2	14.2	100	22.2	4	1.5	7.5	9.0	5	6.1	94	100
												7.5	9.0	97	100
												10	11.0	100	110
										10	11.0	5	6.1	97	100
												7.5	9.0	100	110
												10	11.0	102	110
										15	17.0	5	6.1	104	110
												7.5	9.0	107	110
												10	11.0	109	125
										20	22.0	5	6.1	111	125
												7.5	9.0	113	125
												10	11.0	115	125
	E1	108	2	2	14.2	100	22.2	4	1.5	7.5	9.0	5	6.1	121	150
												7.5	9.0	124	150
												10	11.0	127	150
										10	11.0	5	6.1	124	150
												7.5	9.0	127	150
												10	11.0	129	150
										15	17.0	5	6.1	131	150
												7.5	9.0	134	150
												10	11.0	136	150
										20	22.0	5	6.1	138	150
												7.5	9.0	140	150
												10	11.0	142	150

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 55: ELECTRICAL DATA 30 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22

Voltage	Electric Heat			Compressors (each)				OD Fan Motors (each)		Supply Blower		Pwr Exh Motor		MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Option	kW	Stages	Qty.	RLA	LRA	MCC	Qty	FLA	HP	FLA	HP	FLA		
208-3-60	E4	40	1	3	37.2	239	58.0	3	5.8	10	30.8	7.5	24.2	189	225
												10	30.8	196	225
												15	46.2	214	250
										15	46.2	7.5	24.2	207	250
												10	30.8	214	250
												15	46.2	229	250
										20	59.4	7.5	24.2	224	250
												10	30.8	230	250
												15	46.2	246	300
										25	74.8	7.5	24.2	243	300
												10	30.8	249	300
												15	46.2	265	300
	E8	80	2	3	37.2	239	58.0	3	5.8	10	30.8	7.5	24.2	229	250
												10	30.8	236	250
												15	46.2	255	300
										15	46.2	7.5	24.2	249	250
												10	30.8	255	300
												15	46.2	271	300
										20	59.4	7.5	24.2	265	300
												10	30.8	272	300
												15	46.2	287	300
										25	74.8	7.5	24.2	284	350
												10	30.8	291	350
												15	46.2	306	350
230-3-60	E4	40	1	3	37.2	239	58.0	3	5.8	10	28.0	7.5	22.0	184	200
												10	28.0	190	225
												15	42.0	205	225
										15	42.0	7.5	22.0	199	225
												10	28.0	205	225
												15	42.0	219	250
										20	54.0	7.5	22.0	214	250
												10	28.0	220	250
												15	42.0	234	250
										25	68.0	7.5	22.0	232	250
												10	28.0	238	300
												15	42.0	252	300
	E8	80	2	3	37.2	239	58.0	3	5.8	10	28.0	7.5	22.0	249	250
												10	28.0	255	300
												15	42.0	273	300
										15	42.0	7.5	22.0	267	300
												10	28.0	273	300
												15	42.0	287	300
										20	54.0	7.5	22.0	282	300
												10	28.0	288	300
												15	42.0	302	350
										25	68.0	7.5	22.0	299	350
												10	28.0	305	350
												15	42.0	319	350

TABLE 55: ELECTRICAL DATA 30 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22 (CONTINUED)

VOLTAGE	ELECTRIC HEAT			COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	OPTION	KW	STAGES	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
460-3-60	E4	40	1	3	17.2	125	27.0	3	2.2	10	14.0	7.5	11.0	89	100
												10	14.0	92	100
												15	21.0	100	110
										15	21.0	7.5	11.0	97	110
												10	14.0	100	110
												15	21.0	107	125
										20	27.0	7.5	11.0	105	125
												10	14.0	108	125
												15	21.0	115	125
										25	34.0	7.5	11.0	114	125
												10	14.0	117	125
												15	21.0	124	150
	E8	80	2	3	17.2	125	27.0	3	2.2	10	14.0	7.5	11.0	125	125
												10	14.0	128	150
												15	21.0	136	150
										15	21.0	7.5	11.0	133	150
												10	14.0	136	150
												15	21.0	143	150
										20	27.0	7.5	11.0	141	150
												10	14.0	144	150
												15	21.0	151	175
										25	34.0	7.5	11.0	150	175
												10	14.0	153	175
												15	21.0	160	175
	E1	108	2	3	17.2	125	27.0	3	2.2	10	14.0	7.5	11.0	158	175
												10	14.0	161	175
												15	21.0	170	175
										15	21.0	7.5	11.0	167	175
												10	14.0	170	175
												15	21.0	177	200
										20	27.0	7.5	11.0	175	200
												10	14.0	178	200
												15	21.0	185	200
										25	34.0	7.5	11.0	183	200
												10	14.0	186	200
												15	21.0	193	225

TABLE 55: ELECTRICAL DATA 30 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22 (CONTINUED)

Voltage	Electric Heat			Compressors (each)				OD Fan Motors (each)		Supply Blower		Pwr Exh Motor		MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Option	kW	Stages	Qty.	RLA	LRA	MCC	Qty	FLA	HP	FLA	HP	FLA		
575-3-60	E4	40	1	3	12.4	80	19.3	3	1.7	10	11.0	7.5	9.0	71	80
												10	11.0	73	80
												15	17.0	80	90
										15	17.0	7.5	9.0	78	80
												10	11.0	80	90
												15	17.0	86	90
										20	22.0	7.5	9.0	85	100
												10	11.0	87	100
												15	17.0	93	100
										25	27.0	7.5	9.0	91	110
												10	11.0	93	110
												15	17.0	99	110
	E8	80	2	3	12.4	80	19.3	3	1.7	10	11.0	7.5	9.0	100	110
												10	11.0	102	110
												15	17.0	109	125
										15	17.0	7.5	9.0	107	110
												10	11.0	109	125
												15	17.0	115	125
										20	22.0	7.5	9.0	113	125
												10	11.0	115	125
												15	17.0	121	125
										25	27.0	7.5	9.0	120	125
												10	11.0	122	125
												15	17.0	128	150
	E1	108	2	3	12.4	80	19.3	3	1.7	10	11.0	7.5	9.0	127	150
												10	11.0	129	150
												15	17.0	136	150
										15	17.0	7.5	9.0	134	150
												10	11.0	136	150
												15	17.0	142	150
										20	22.0	7.5	9.0	140	150
												10	11.0	142	150
												15	17.0	148	150
										25	27.0	7.5	9.0	147	150
												10	11.0	149	175
												15	17.0	155	175

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 56: ELECTRICAL DATA 40 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22

VOLTAGE	ELECTRIC HEAT			COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	OPTION	KW	STAGES	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
208-3-60	E4	40	1	4	37.2	239	58.0	4	4.5	10	30.8	7.5	24.2	231	250
												10	30.8	238	250
												15	46.2	255	300
										15	46.2	7.5	24.2	249	250
												10	30.8	255	300
												15	46.2	271	300
										20	59.4	7.5	24.2	265	300
												10	30.8	272	300
												15	46.2	287	300
										25	74.8	7.5	24.2	285	350
												10	30.8	291	350
												15	46.2	307	350
	E8	80	2	4	37.2	239	58.0	4	4.5	10	30.8	7.5	24.2	231	250
												10	30.8	238	250
												15	46.2	255	300
										15	46.2	7.5	24.2	249	250
												10	30.8	255	300
												15	46.2	271	300
										20	59.4	7.5	24.2	265	300
												10	30.8	272	300
												15	46.2	287	300
										25	74.8	7.5	24.2	285	350
												10	30.8	291	350
												15	46.2	307	350
230-3-60	E4	40	1	4	37.2	239	58.0	4	4.5	10	28.0	7.5	22.0	225	250
												10	28.0	231	250
												15	42.0	247	250
										15	42.0	7.5	22.0	241	250
												10	28.0	247	250
												15	42.0	261	300
										20	54.0	7.5	22.0	256	300
												10	28.0	262	300
												15	42.0	276	300
										25	68.0	7.5	22.0	273	300
												10	28.0	279	300
												15	42.0	293	350
	E8	80	2	4	37.2	239	58.0	4	4.5	10	28.0	7.5	22.0	249	250
												10	28.0	255	300
												15	42.0	273	300
										15	42.0	7.5	22.0	267	300
												10	28.0	273	300
												15	42.0	287	300
										20	54.0	7.5	22.0	282	300
												10	28.0	288	300
												15	42.0	302	350
										25	68.0	7.5	22.0	299	350
												10	28.0	305	350
												15	42.0	319	350

TABLE 56: ELECTRICAL DATA 40 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22 (CONTINUED)

Voltage	Electric Heat			Compressors (each)				OD Fan Motors (each)		Supply Blower		Pwr Exh Motor		MCA[1] (Amps)	Max Fuse[2] / Breaker[3] Size
	Option	kW	Stages	Qty.	RLA	LRA	MCC	Qty	FLA	HP	FLA	HP	FLA		
460-3-60	E4	40	1	4	17.2	125	27.0	4	2.2	10	14.0	7.5	11.0	107	110
												10	14.0	110	125
												15	21.0	118	125
										15	21.0	7.5	11.0	115	125
												10	14.0	118	125
												15	21.0	125	125
										20	27.0	7.5	11.0	122	125
												10	14.0	125	150
												15	21.0	132	150
										25	34.0	7.5	11.0	131	150
												10	14.0	134	150
												15	21.0	141	150
	E8	80	2	4	17.2	125	27.0	4	2.2	10	14.0	7.5	11.0	125	125
												10	14.0	128	150
												15	21.0	136	150
										15	21.0	7.5	11.0	133	150
												10	14.0	136	150
												15	21.0	143	150
										20	27.0	7.5	11.0	141	150
												10	14.0	144	150
												15	21.0	151	175
										25	34.0	7.5	11.0	150	175
												10	14.0	153	175
												15	21.0	160	175
	E1	108	2	4	17.2	125	27.0	4	2.2	10	14.0	7.5	11.0	158	175
												10	14.0	161	175
												15	21.0	170	175
										15	21.0	7.5	11.0	167	175
												10	14.0	170	175
												15	21.0	177	200
										20	27.0	7.5	11.0	175	200
												10	14.0	178	200
												15	21.0	185	200
										25	34.0	7.5	11.0	183	200
												10	14.0	186	200
												15	21.0	193	225

TABLE 56: ELECTRICAL DATA 40 TON WITH ELECTRIC HEAT AND POWER EXHAUST R22 (CONTINUED)

VOLTAGE	ELECTRIC HEAT			COMPRESSORS (EACH)				OD FAN MOTORS (EACH)		SUPPLY BLOWER		PWR EXH MOTOR		MCA[1] (AMPS)	MAX FUSE[2] / BREAKER[3] SIZE
	OPTION	KW	STAGES	QTY.	RLA	LRA	MCC	QTY	FLA	HP	FLA	HP	FLA		
575-3-60	E4	40	1	4	12.4	80	19.3	4	1.7	10	11.0	7.5	9.0	80	90
												10	11.0	82	90
												15	17.0	89	100
										15	17.0	7.5	9.0	87	100
												10	11.0	89	100
												15	17.0	95	110
										20	22.0	7.5	9.0	93	110
												10	11.0	95	110
												15	17.0	101	110
										25	27.0	7.5	9.0	99	125
												10	11.0	101	125
												15	17.0	107	125
	E8	80	2	4	12.4	80	19.3	4	1.7	10	11.0	7.5	9.0	100	110
												10	11.0	102	110
												15	17.0	109	125
										15	17.0	7.5	9.0	107	110
												10	11.0	109	125
												15	17.0	115	125
										20	22.0	7.5	9.0	113	125
												10	11.0	115	125
												15	17.0	121	125
										25	27.0	7.5	9.0	120	125
												10	11.0	122	125
												15	17.0	128	150
	E1	108	2	4	12.4	80	19.3	4	1.7	10	11.0	7.5	9.0	127	150
												10	11.0	129	150
												15	17.0	136	150
										15	17.0	7.5	9.0	134	150
												10	11.0	136	150
												15	17.0	142	150
										20	22.0	7.5	9.0	140	150
												10	11.0	142	150
												15	17.0	148	150
										25	27.0	7.5	9.0	147	150
												10	11.0	149	175
												15	17.0	155	175

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC

TABLE 57: UNIT WEIGHTS

COMPONENT	25 TON	30 TON	40 TON
Basic Unit	4410	4565	4845
Gas Heat			
267 MBH	180	180	180
533 MBH	320	320	320
800 MBH	-	-	450
Electric Heat			
40KW	40	40	40
80KW	105	105	105
108KW	110	110	110
Hot Water Heat			
1 Row Coil	70	70	70
2 Row Coil	85	85	85
Steam Heat			
1 Row Coil	85	85	85
Blower			
Forward Curve Fan (Std Fan)	0	0	0
FC IGV	155	155	175
Air Foil Fan	135	135	155
AF IGV	155	155	180
Motor - Supply Fan			
7.5hp	110	-	-
10hp	145	145	145
15hp	200	200	200
20hp	240	240	240
25hp	-	300	300
Supply Fan Motor VFD	See Table 58		
Refrigeration			
Hi Cap. Evap. Coil	-	50	15
T-Coat Evap.	32	30	40
T-Coat cond.	32	30	40
Hot Gas Bypass	10	10	10
Low Ambient Head Pressure Control			
208-230/380/460	5	5	5
575	25	25	25
Filters			
6" Rigid	70	70	70
Exhaust[1]			
Exhaust Type			
Barometric	45	65	65
Modulated	140	275	275
Exhaust Motor			
5hp	80	80	80
7.5hp	110	110	110
10hp	145	145	145
15hp	200	200	200
Exhaust Motor VFD	See Table 59		
Economizer			
Std. Econ.	235	235	235
Econ. w/ERV	50	50	50
Control			
Disconnect	15	15	15
110V outlet	55	55	55
Optilogic	20	20	20
Roof Curb			
Partial Curb	415	415	415

1. If ERV and Supply Fan VAV are selected, add the weight of an Exhaust VFD, Table 58.

TABLE 58: SUPPLY FAN MOTOR VFD WEIGHTS

Supply Fan Motor VFD	230V	460V	575V
W/O Bypass			
7.5hp	60	25	30
10hp	60	25	30
15hp	75	50	60
20hp	75	50	60
25hp	115	50	60
W/Bypass			
7.5hp	155	90	120
10hp	155	90	120
15hp	185	140	155
20hp	185	140	155
25hp	255	140	155

TABLE 59: EXHAUST FAN MOTOR VFD WEIGHTS

Exhaust Fan Motor	230V	460V	575V
W/O Bypass			
5hp	15	10	20
7.5hp	50	15	20
10hp	50	15	20
15hp	65	40	50

NOTE: If the Millennium is VAV with ERV, add the weight of an exhaust VFD - it will be in the unit.

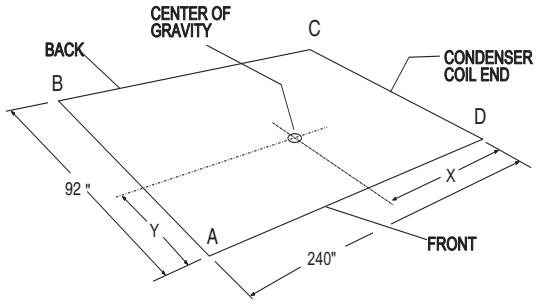


FIGURE 27 - CENTER OF GRAVITY

TABLE 60: UNIT CENTER OF GRAVITY

MODEL	25 TON		30 TON		40 TON	
	X	Y	X	Y	X	Y
BASIC UNIT	99”	48”	100”	47”	96”	46"
BASIC UNIT /W ECON.	110”	48”	110”	47”	100”	46"
BASIC UNIT /W ECON. & GAS OR ELECT. HEAT, STEAM OR HOT WATER HEAT	104”	48”	104”	46”	99”	45"
BASIC UNIT /W ECON. & GAS OR ELECT. HEAT, & POWER EXHAUST	118”	47”	114”	46”	111”	45"

TABLE 61: UNIT CORNERWEIGHT

UNIT DESCRIPTION	25 TON				30 TON				40 TON			
	A	B	C	D	A	B	C	D	A	B	C	D
BASIC UNIT	870	949	1352	1239	930	972	1360	1303	969	969	1454	1454
BASIC UNIT WITH ECONOMIZER	1018	1111	1313	1203	1076	1124	1328	1272	1058	1058	1482	1482
BASIC UNIT WITH ECONOMIZER AND GAS OR ELECTRIC HEAT	994	1084	1418	1300	1073	1073	1403	1403	1102	1055	1503	1570
BASIC UNIT WITH ECONOMIZER AND GAS OR ELECTRIC HEAT AND POWER EXHAUST	1220	1275	1318	1262	1275	1275	1410	1410	1335	1278	1485	1551

NOTES:Basic Unit = cooling only, 10hp FC fan.
+ Econ = +235lb
+ Heat = single stage gas, 180 lb
+ Power Exhaust = modulating 7.5hp

TABLE 62: INDOOR SOUND POWER RATING

MODEL NUMBER	CFM	ESP	BLOWER		SOUND POWER (DB 10-12 WATTS)								
					OCTAVE BAND CENTERLINE FREQUENCY (HZ)								DBA
		IWG	RPM	BHP	63	125	250	500	1000	2000	4000	8000	
Y32	10,000	1.5	750	7.5	90	88	85	85	80	78	74	68	87
Y33	12750	1.5	840	12.8	93	91	88	88	83	81	77	71	90
Y34	17500	1.3	800	20	95	92	89	89	84	83	78	72	91

Sound Power Ratings for Supply Air Blowers in our Millennium Units with High Gas Heat, Economizer, 2: T/A Filters and Wet DX Sound power calculations complements of Lau's revised "Whirlwind" application selection software for air moving components.

The sound ratings above occur at the blower wheel. To determine the sound rating at a unit's supply and return air duct connection, subtract the attenuation factors listed below.

TABLE 63: ATTENUATION FACTORS

LOCATION	OCTAVE BAND CENTERLINE FREQUENCY (HZ)							
	63	125	250	500	1000	2000	4000	8000
	SOUND ATTENUATION (DB[12] WATTS)							
SUPPLY AIR	11	13	18	10	21	21	23	23
RETURN AIR	13	15	22	23	25	25	29	29

TABLE 64: OUTDOOR SOUND POWER RATING

MODEL	OCTAVE BAND CENTERLINE FREQUENCY (HERTZ)								db(A)
	65	125	250	500	1000	2000	4000	8000	
	SOUND POWER LEVEL, DB (10)-12 WATTS								
Y32	88	91	89	86	82	79	76	72	88
Y33	87	90	88	86	82	80	77	73	88
Y34	88	91	89	86	82	80	77	73	88

NOTE: These values have been accessed using a model of sound propagation from a point source into the hemispheric free field (AMCA 303-79). The dBA values provided are to be used for reference only. Calculation of dBA values cover matters of system design, and the fan manufacturer has no way of knowing the details of each system. This constitutes an exception to any specification or guarantee requiring a dBA value or sound data in any other form than sound power level ratings.

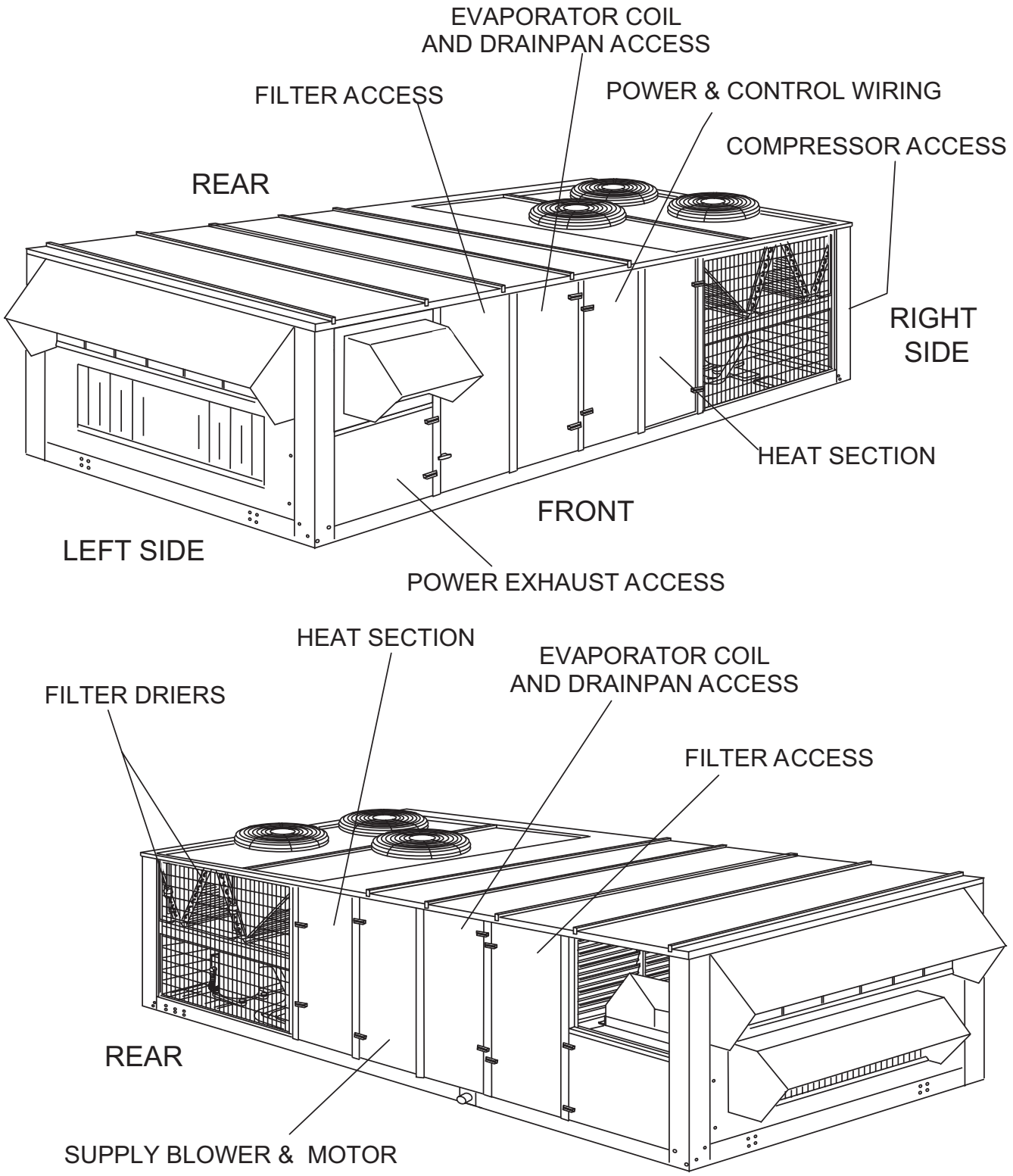
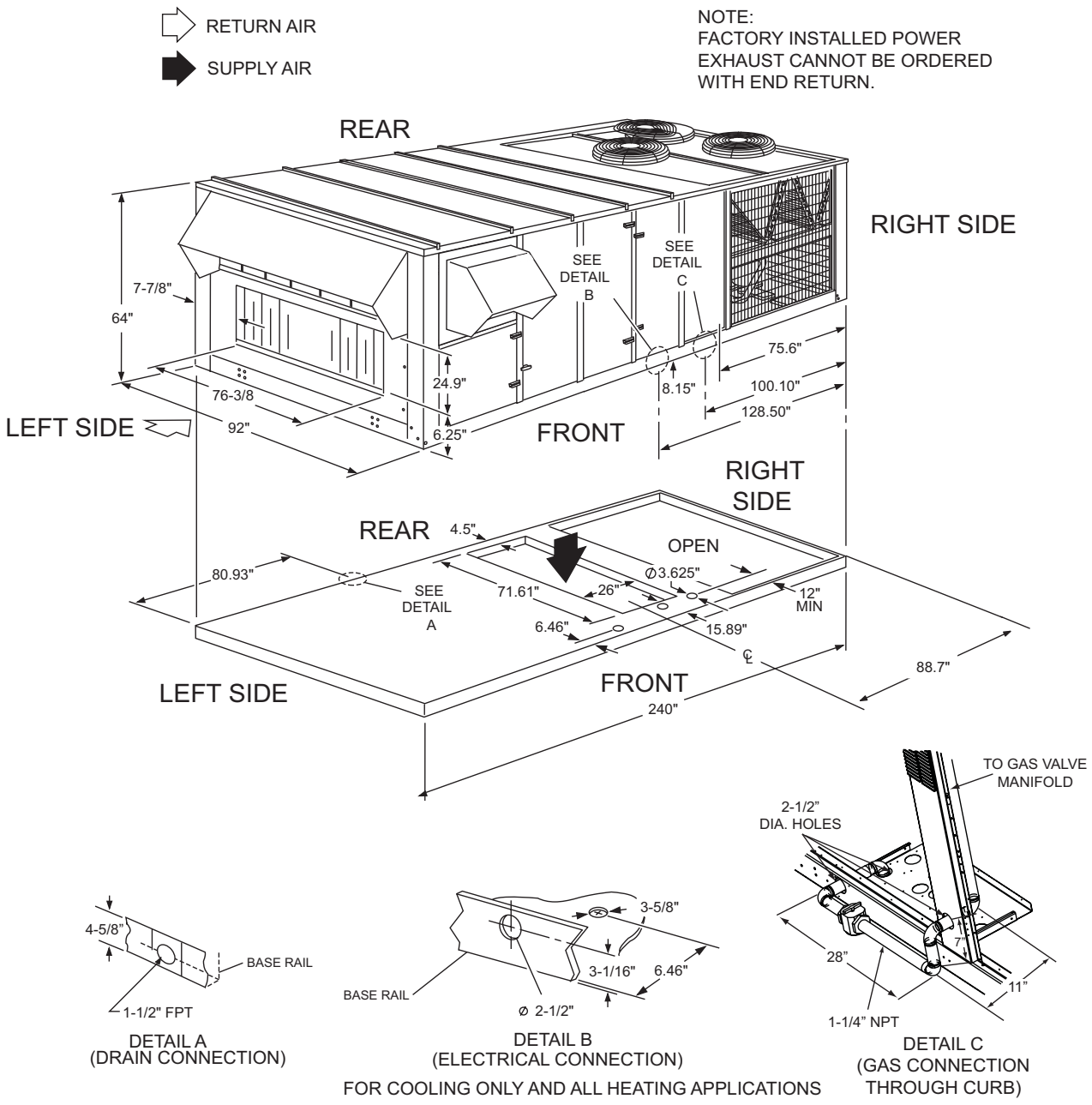


FIGURE 28 - COMPONENT LOCATION



DETAIL A
(DRAIN CONNECTION)

DETAIL B
(ELECTRICAL CONNECTION)

DETAIL C
(GAS CONNECTION THROUGH CURB)

FOR COOLING ONLY AND ALL HEATING APPLICATIONS

FIGURE 29 - END RETURN, BOTTOM SUPPLY

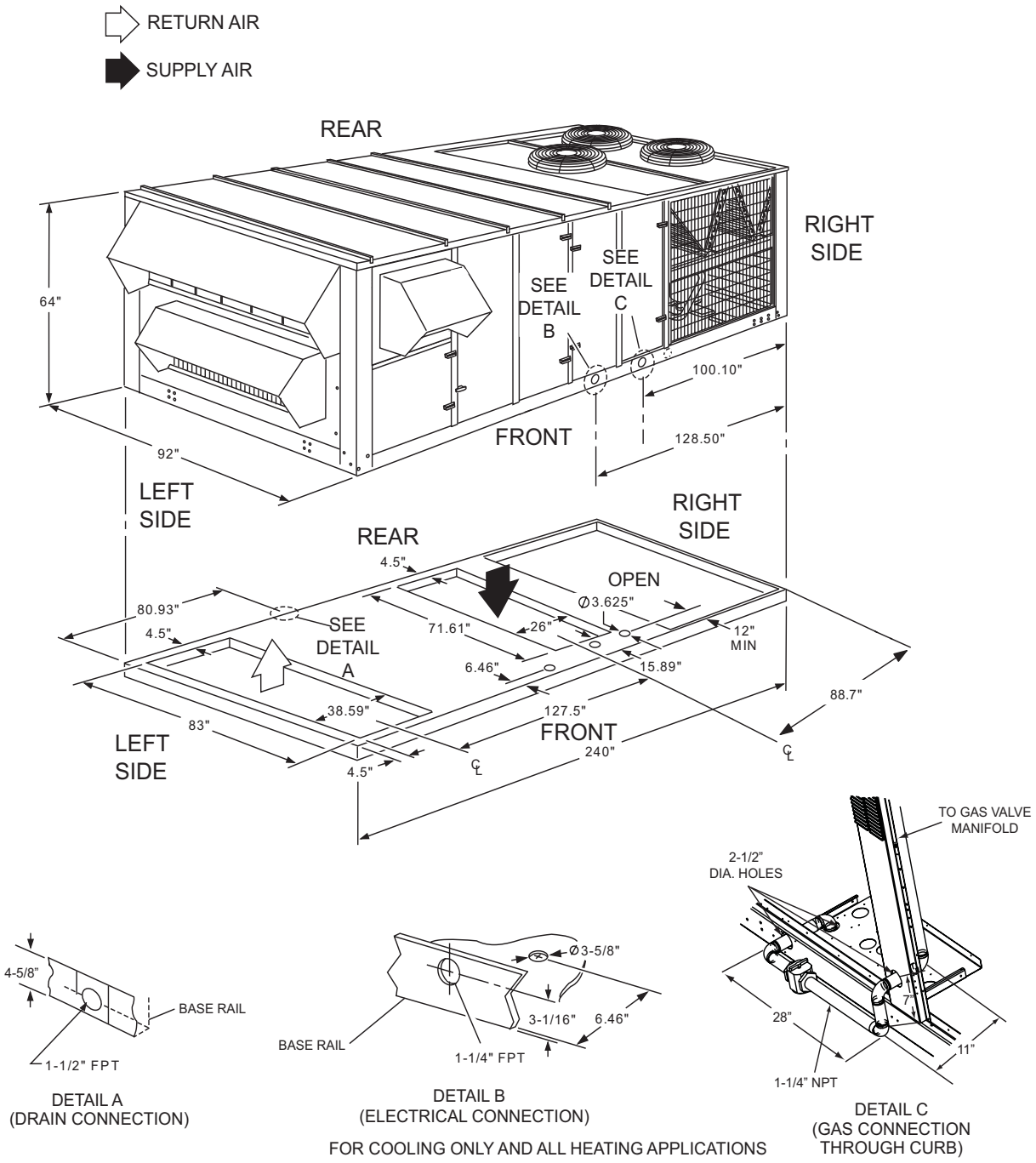


FIGURE 30 - BOTTOM SUPPLY AND RETURN

FRONT SUPPLY: FOR COOLING ONLY APPLICATIONS
REAR SUPPLY: FOR COOLING ONLY OR GAS HEAT APPLICATIONS

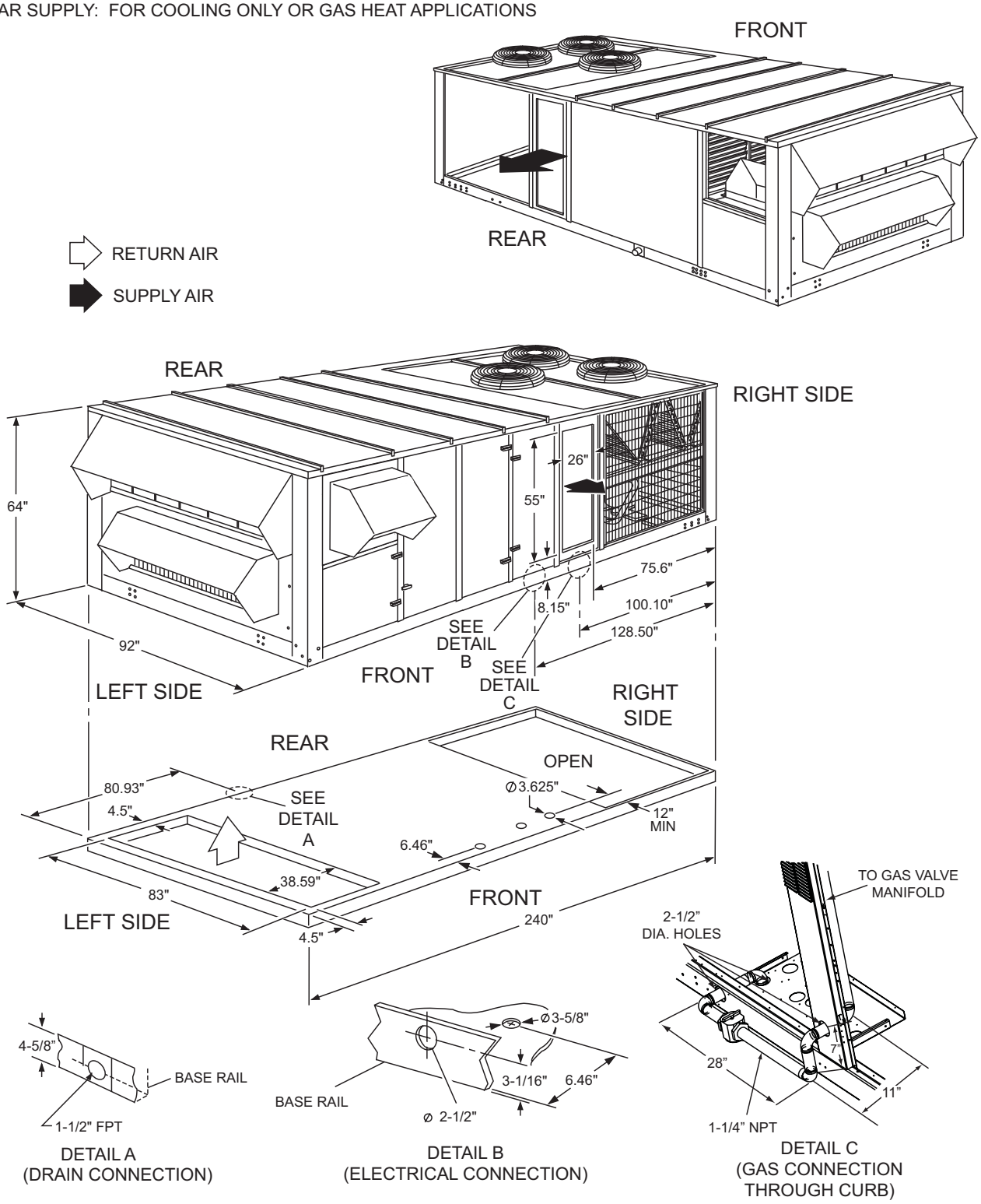


FIGURE 31 - BOTTOM RETURN, FRONT & REAR SUPPLY

FRONT SUPPLY: FOR COOLING ONLY APPLICATIONS
REAR SUPPLY: FOR COOLING ONLY OR GAS HEAT APPLICATIONS

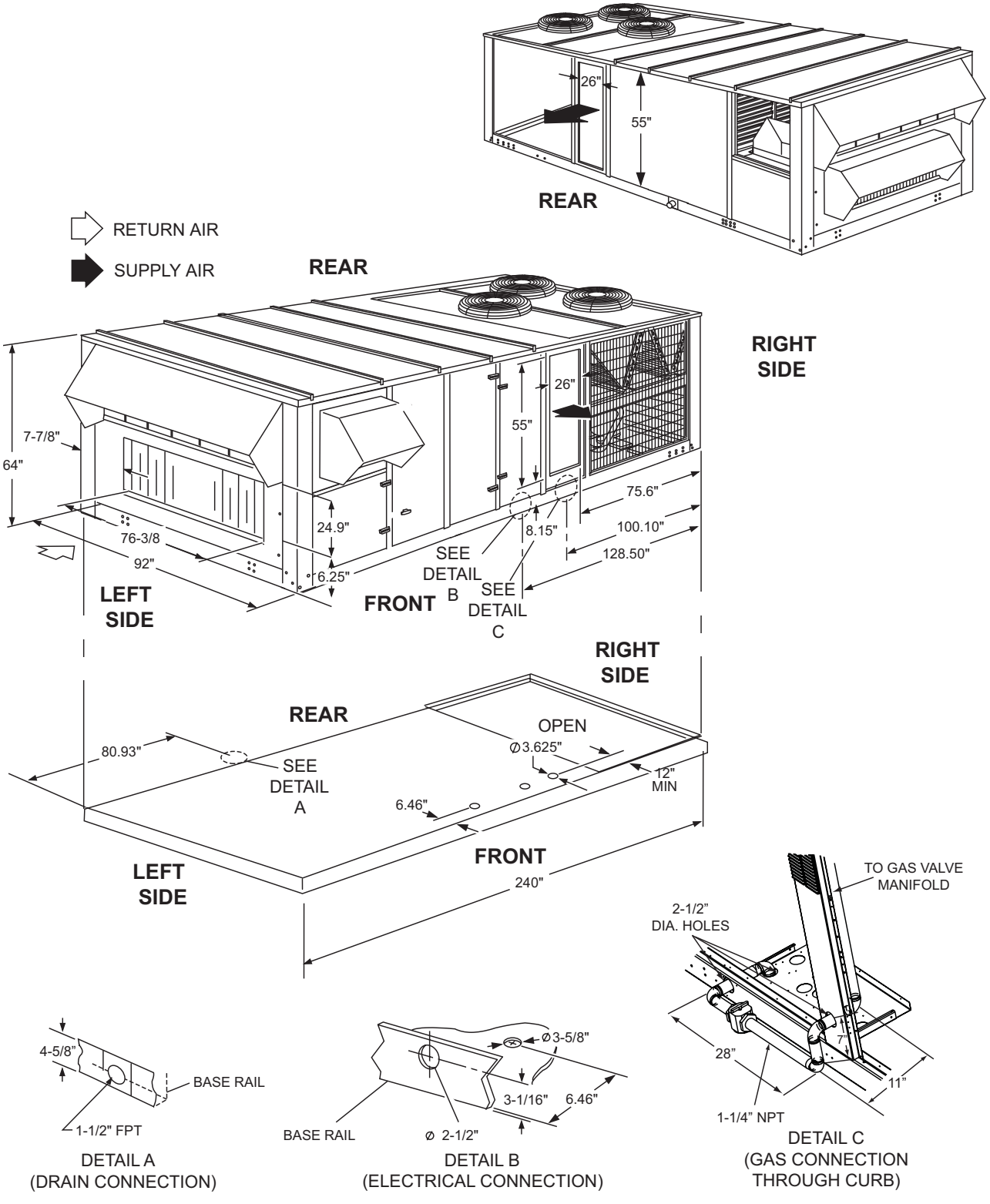


FIGURE 32 - END RETURN, FRONT & REAR SUPPLY

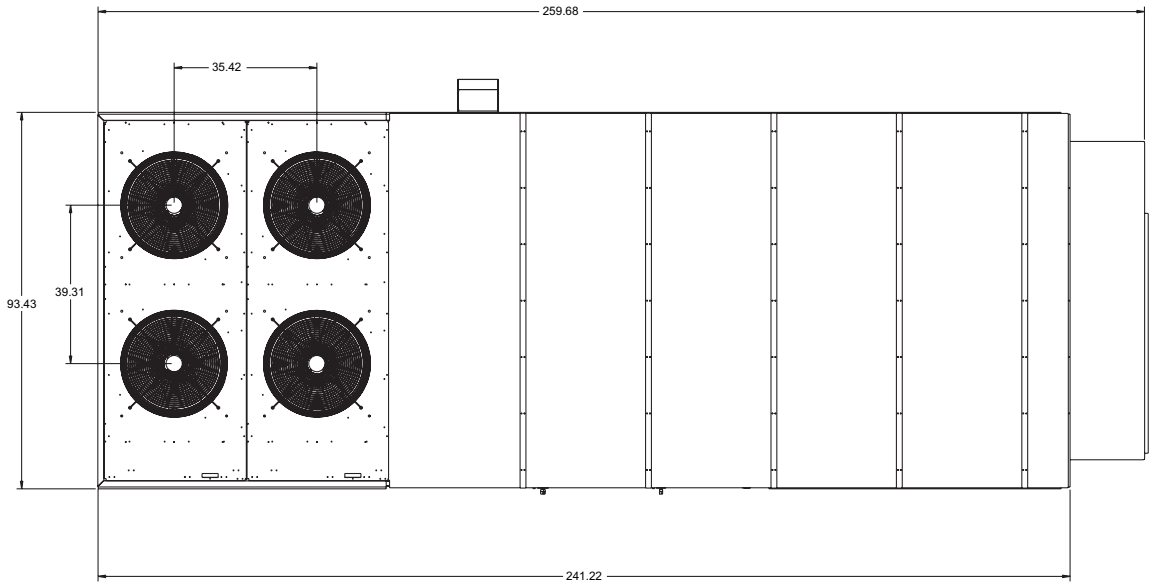


FIGURE 33 - MILLENNIUM OVERHEAD VIEW

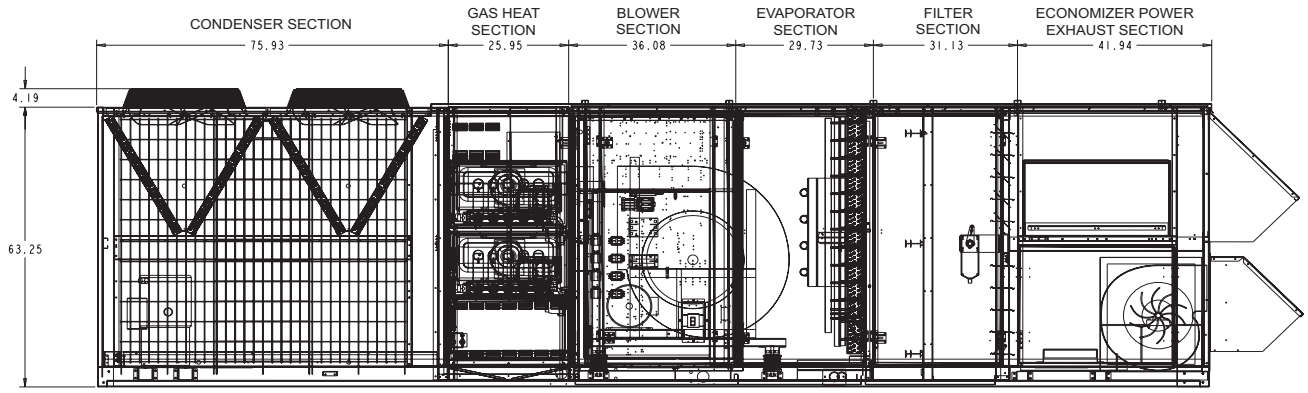
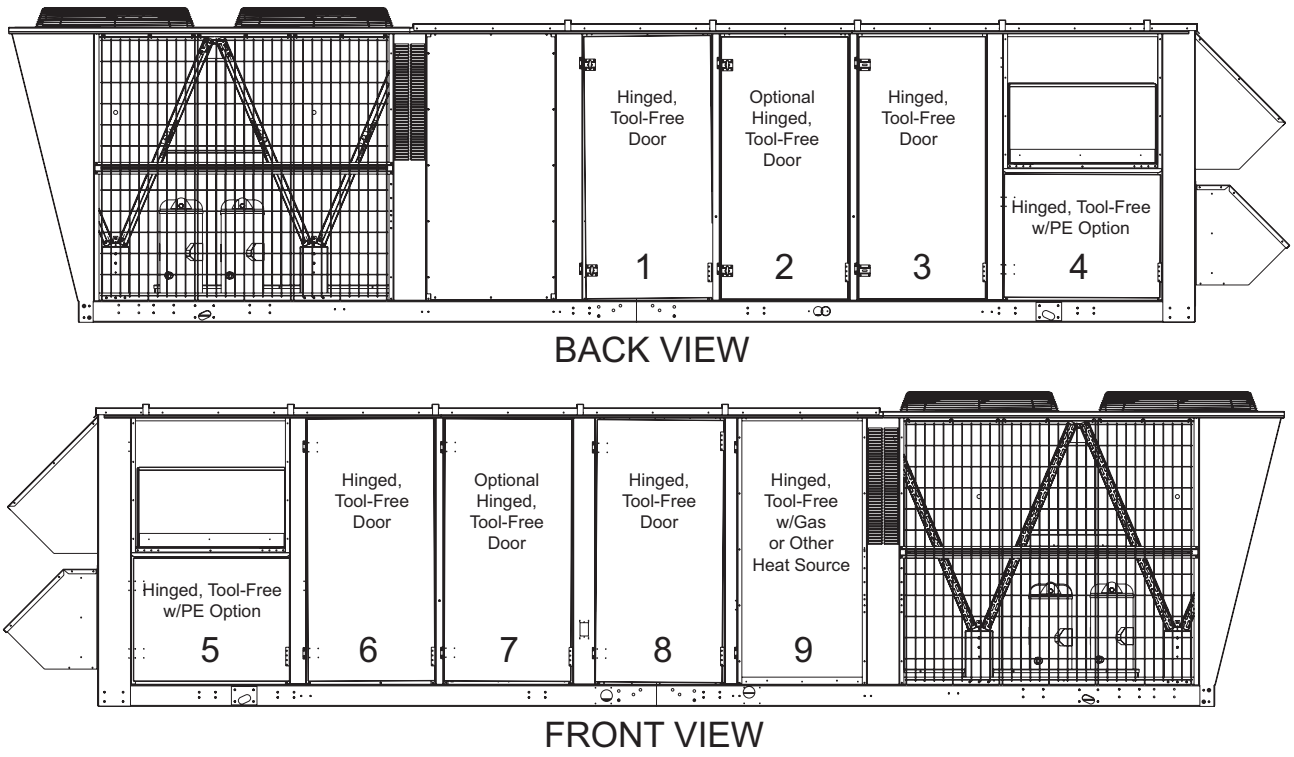


FIGURE 34 - MILLENNIUM MAJOR COMPONENT LAYOUT



1. STD Cabinet Option includes Hinged, Tool-Free Doors # 1, 3, 6, 8.
2. Premium Cabinet Option includes Hinged, Tool-Free Doors # 1, 2, 3, 6, 7, 8.
3. Doors # 4, 5, 9 are dependent upon unit Heating and Power Exhaust Options.
4. Doors 1, 2, 3, 6, 7, 8 & 9 are 56.31 inches high by 27.33 inches wide.
5. Doors 4 & 5 are 26.5 inches high by 33.63 inches wide.

FIGURE 35 - MILLENNIUM CABINET DOOR CONFIGURATION

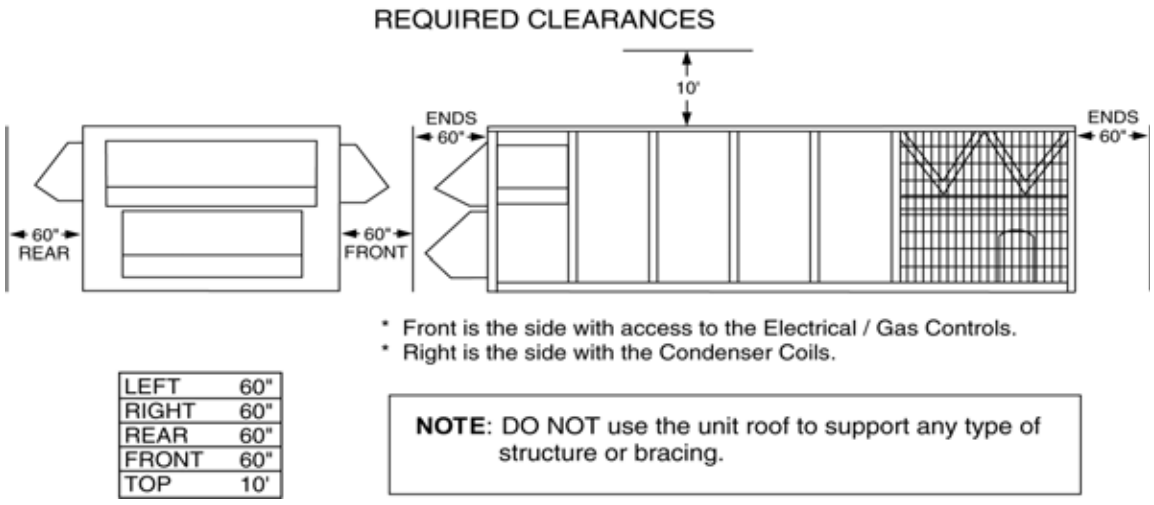


FIGURE 36 - CLEARANCES - HOOD/ECONOMIZER & MOTOR DRIVE - SIDE

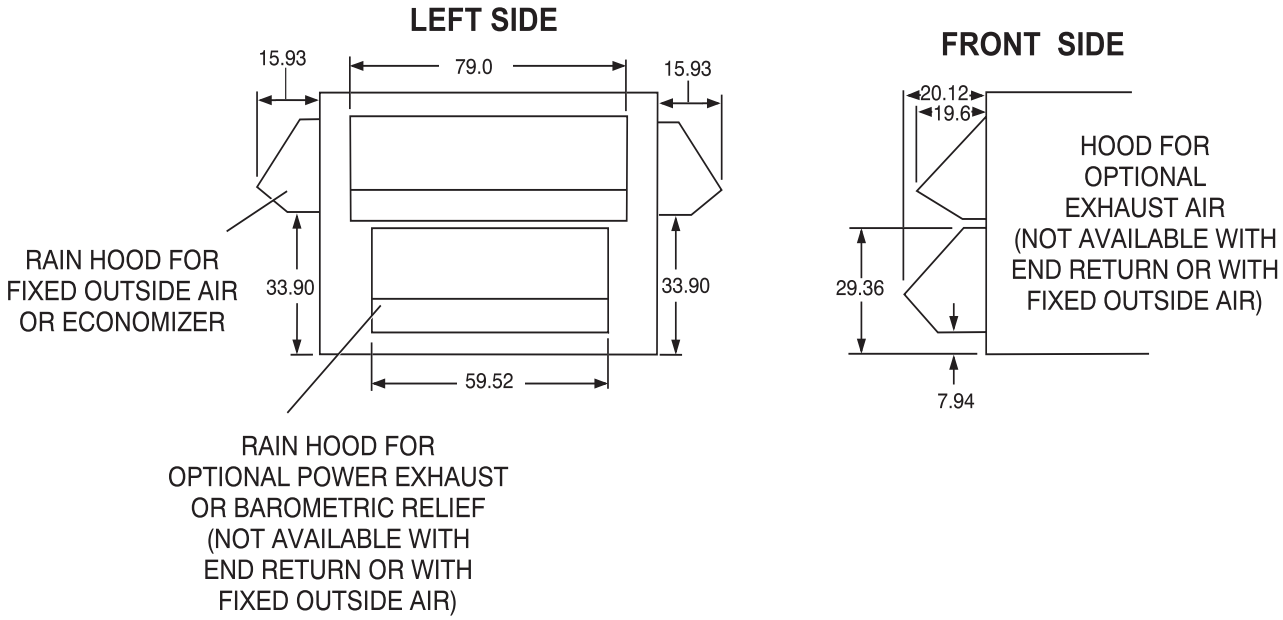
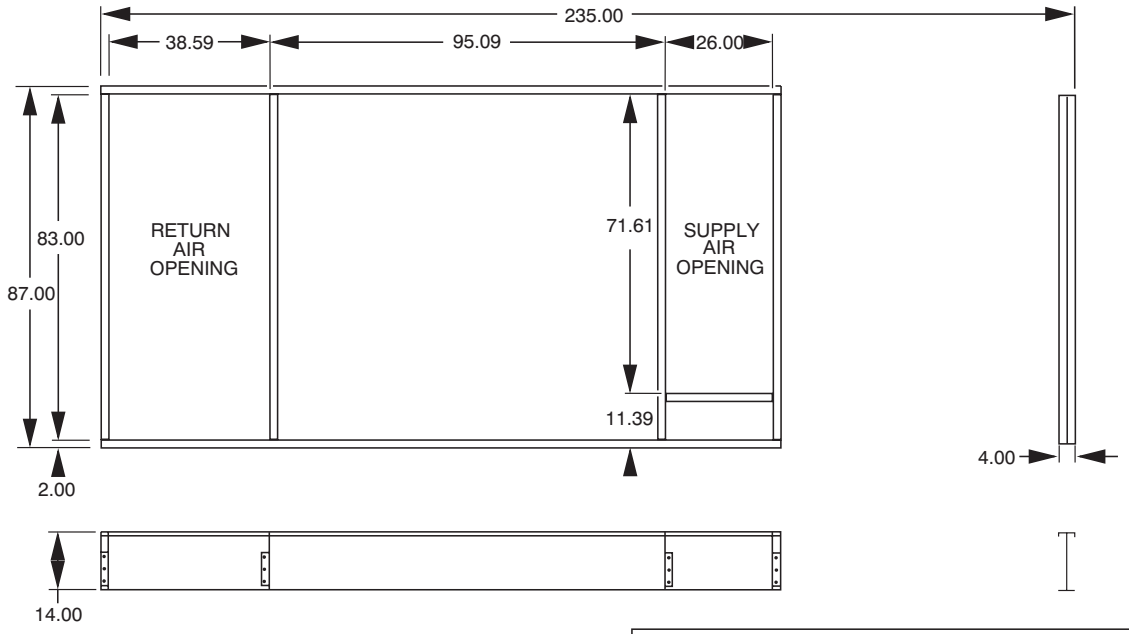
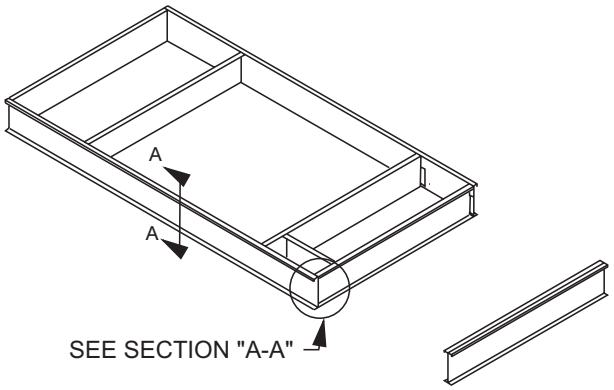
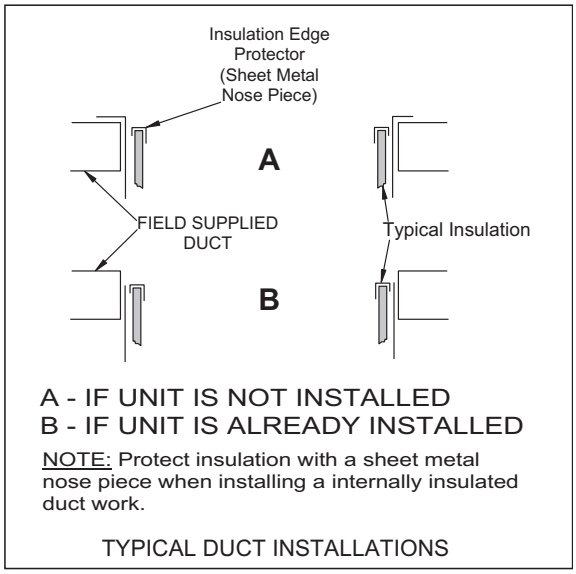
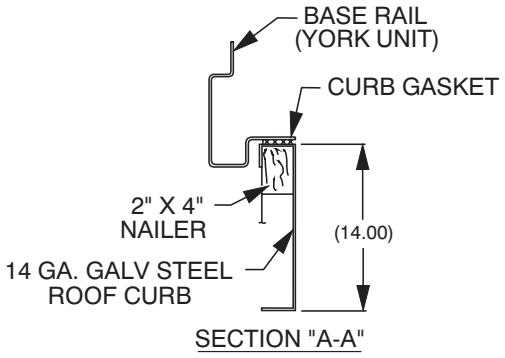


FIGURE 37 - CLEARANCES - HOOD/ECONOMIZER & MOTOR DRIVE - FRONT & END






Insulation Edge Protector (Sheet Metal Nose Piece)
A
FIELD SUPPLIED DUCT
Typical Insulation
B
A - IF UNIT IS NOT INSTALLED
B - IF UNIT IS ALREADY INSTALLED
NOTE: Protect insulation with a sheet metal nose piece when installing a internally insulated duct work.
TYPICAL DUCT INSTALLATIONS



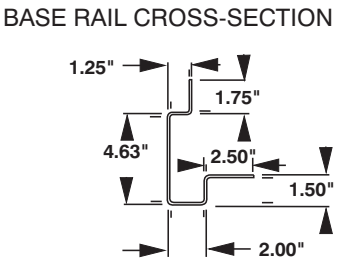


FIGURE 38 - PARTIAL ROOF CURB MODEL 1RC0455P

GUIDE SPECIFICATIONS - YORK MILLENNIUM 25, 30, & 40 TON UNITS

GENERAL

Units shall be manufactured by Johnson Controls Unitary Products in an ISO 9001 certified facility. Introducing the YORK Millennium 25, 30, & 40 ton rooftop line - units designed to provide peak performance and value both today and for years to come. Millennium units are manufactured at an ISO 9001 registered facility, and each rooftop is completely computer-run tested prior to shipment. The Millennium is designed to be flexible enough to meet your needs today and in the future. The true value of York's Millennium is that it can be designed to fit any need, from cooling only, constant volume applications to variable air volume systems with variable frequency drive.

DESCRIPTION

Supply York Millennium packaged rooftop system in accordance with the capacities in the plans. Units shall be rated by the manufacturer at a minimum (30/40 Ton units: 9.5 EER / 25 Ton units: 10 EER) according to ARI 360. Units shall be shipped in a single package, fully charged with R-22 refrigerant. The manufacturing facility shall be registered under ISO 9001 Quality Standards for Manufacturing. Units shall carry both ETL and CSA safety approval ratings. Tags and decals to aid in the service or indicate caution areas shall be provided. Installation and maintenance manuals shall be supplied with each unit. Units shall be capable of providing mechanical cooling down to 40°F (0°F with low ambient kit). Unit shall be capable of starting and running at 125°F. Unit electric and gas connections shall be either through the curb or the side of the unit.

CONSTRUCTION

Base

The base rail shall be constructed of 12 gauge galvanized steel, extending the full perimeter of the unit. All components shall be supported from the base, and the base shall include integral lifting lugs. The unit base rail shall overhang the roof curb for water runoff and shall have a fabricated recess with a continuous flat surface to seat on the roof curb gasket, providing a positive, weather tight seal between the unit and the curb.

Casing

The unit cabinet shall be double wall construction to provide both maximum resistance to bacterial growth in the air stream and superior structural integrity. All sheet metal shall be G90 mill galvanized sheet metal, formed and reinforced to provide a rigid assembly. Sheet metal shall be cleaned in an alkaline and zinc phosphate bath, and the exterior surfaces shall be coated with a 1.5 mil powder paint, capable of withstanding 1000 salt spray hours in accordance with ASTM B-117. The unit shall be insulated with 1-1/2", 1 pound density fiberglass insulation between the two sheet metal skins. Insulation shall meet NFPA-90A regulations for smoke and flame spread ratings. The cabinet corner post and the intermediate side supports shall be 16 gauge steel. All access doors shall be 18 gauge on the exterior surfaces, and 20 gauge on the interior. Floor shall be 18 gauge, and 24 gauge. All serviceable sections shall have hinged access doors with latches on both sides of the unit. All access doors shall be constructed of 20 gauge steel on the outside, with 24 gauge on the inside. Each door shall seal against a rubber gasket to prevent air and water leakage. The roof shall be double wall, with 18 gauge on the external surface and 24 gauge on the interior. The roof shall be formed with a 45 degree drip lip overhanging the sidewalls to prevent precipitation drainage from streaming down the side of the unit. Roof sections shall be connected together via integral channels fastened with screws and sealed with rubber gasketing. Each fastened seam shall be further protected by a sheet metal channel covering the full length of the gasket surface, making a completely water tight seal.

SUPPLY AIR SYSTEM

SUPPLY AIR FAN

Fans shall be centrifugal type - Class I or Class II, statically and dynamically balanced in the factory. Fan wheels shall be designed for continuous operation at the maximum rate of fan speed and motor HP. The fan and motor assembly shall be mounted on a common base to allow consistent belt tension with no relative motion between the fan and motor shafts. The entire assembly shall be isolated from the unit base with (optional 1”, 2" deflection springs or rubber isolators). The fan discharge shall be connected to the cabinet through a reinforced neoprene flexible connection to eliminate vibration transmission from the fan to the unit casing. Fans shall be double-width, double-inlet with forward curved blades.

OPTIONAL

On variable air volume units without variable frequency drives, fans shall be provided with heavy gauge, corrosion resistant blades, with zinc-plated steel inter-locking operating mechanism. Both inlet vanes must operate from a single shaft and be synchronized for precise control.

Units equipped with variable frequency drive on supply fan must be controlled by a duct static transducer providing a 2-10 VDC signal to the drive. Supply fan variable frequency drives shall have factory option of being equipped with a manual drive bypass.

BEARINGS AND DRIVES

Bearings shall be self-aligning pillow-block re-greasable ball bearings with an average life expectancy of 200,000 hours. Grease fittings shall be accessible through access doors. Fan motors shall be NEMA designed, Standard efficiency (option, Hi-efficiency) ball bearing type with electrical characteristics and horsepower as specified. Motors shall be 1750 RPM, open drip proof type. The motor shall be located within the unit on an adjustable, heavy steel base. All fan motor drives

shall be selected for a minimum service factor of 1.2 and have fixed pitched sheaves.

AIR FILTERING SYSTEM

All filter holding frames shall be of heavy duty construction designed for industrial applications. All filters shall be either side accessible or front loading with access doors provided on both sides of the filter section. All filter media shall be Class II listed under UL Standard 900. Filter efficiencies shall be rated in accordance with ASHRAE Standard 52-76 2" Throwaway Filters with fiberglass media multiple shall be standard

OPTIONAL

Two inch pleated, throwaway filters with 30% efficiency. Rigid filters shall be high performance, expanded area, disposable type filters. Rigid filter sections shall be preceded by a 2 throwaway prefilter assembly. Filter efficiency shall be 95% (Option: 65%) based on ASHRAE Standard 52-76.

AIR INLET SYSTEM

General

Outside Air inlet openings shall be covered by a factory installed rain hood permanently attached to the cabinet to prevent windblown precipitation from entering the unit. The rain hoods on the front and back of the unit shall be rotated into the cabinet and secured for shipment so that upon installation they need only be rotated upwards and screwed into place. The outside air hood shall contain a removable and cleanable filter with an efficiency rating of 50% based on ASHRAE 52- 76. All damper assemblies shall be of low leak design. Damper blades shall be fabricated from a minimum of 16 gauge galvanized steel. Blade ends and edges shall be covered with vinyl seals. Damper shafts shall be fabricated from solid steel and mounted in the frame with bronze bearings. On all units not equipped with an economizer, an option shall be available for a manually adjustable outside air damper shall be capable of admitting 0-25% outside air.

Economizer (Optional)

An economizer shall have outdoor air and return air dampers (optional standard or low leak type) that are interlocked and positioned by fully modulating, solid state damper actuators. The actuators shall be spring loaded so that the outside air damper will close when power to the unit is interrupted. The operation of the economizer shall be fully integrated into the cooling control system. The economizer shall be available for control via a dry bulb sensor (Optional: single or dual enthalpy sensors).

RELIEF SYSTEM (Optional)

All units with relief must have an economizer.

Barometric Relief (Optional)

Building air exhaust shall be accomplished through barometric relief dampers installed in the return air plenum. The dampers will open relative to the building pressure. The opening pressure shall be adjustable.

Exhaust Air Fans (Optional)

General - forward curved centrifugal fan(s) shall be installed in the return air plenum for positive power exhaust. Fans shall be on a common shaft, driven by a single motor. The fans, motors and drives shall be of the same quality and design as specified for the Supply Air Fan, except the fans shall be Class I. Fans shall be capable of exhausting up to 100% of the nominal CFM of the unit. Non-modulating Exhaust - Units with non-modulating power exhaust shall have a barometric relief damper to prevent outside air from entering in the off cycle. The fans shall cycle on and off with building pressure. Modulating Operation - The fans shall be capable of modulating the amount of air from 0% to 100% of nominal CFM. Modulation shall be through discharge dampers or variable frequency motor speed modulation. Dampers or VFD shall be controlled by static pressure in the conditioned space or return air duct.

ENERGY RECOVERY VENTILATION (FIELD INSTALLED OPTION)

General

The packaged rooftop unit shall have attached at the jobsite a powered exhaust combined with an air intake through a rotating energy recovery wheel, which captures sensible and latent heat from the exhaust air stream and returns it to the incoming air stream. The energy recovery module will be contained in a separate enclosure designed to attach to the end of the Millennium packaged rooftop unit equipped with Simplicity® Elite™ control.

The Energy Recovery Ventilation module will be capable of exhausting up to 8,000 (13,000) CFM.

Control parameters for the ERV will be preset in the unit control.

HEATING SYSTEM (OPTIONAL)

Gas-fired Heating Section

One or more gas-fired heating modules shall be installed to provide the heating requirements per the schedule shown on the plans. The heat exchanger shall be of tubular design. Tubes shall be 2-1/4" OD and constructed of minimum 20 gauge, G160 aluminized steel (1.6 mil aluminum silicone alloy) for corrosion resistance (Optional: 409 Stainless Steel). Flue baffles shall be made of 430 stainless steel. Each gas-fired heat module shall have an induced draft combustion fan with energy efficient intermittent pilot spark ignition and redundant main gas valves with pressure regulator. Units with standing pilot ignition shall not be acceptable. An induced draft fan shall be provided to maintain a positive flow of air

through each tube, to expel the flue gas and to maintain a negative pressure within the heat exchanger relative to the conditioned space. Induced draft fans shall be direct-drive. One (1) high limit controller per heating module, with automatic reset to prevent the heat exchanger from operating at an excessive temperature will be installed. A pressure switch on the combustion section must be provided to prevent ignition until sufficient air flow is established through the heat exchanger. Secondary airflow safety shall be provided by rollout switch protection. The rollout switch shall discontinue furnace operation if the flue becomes restricted. Units shall ship with an external flue to be shipped in the unit and mounted on the job site. The flue shall discharge products of combustion above the unit, preventing recycling of corrosive combustion gases back through the heat exchanger. Gas heating sections shall be both ETL and CSA approved to both US and Canadian safety standards.

Optional Modulating Furnace control or Single Stage control available.

Electric Heating Section

An electric slip-in heater shall be installed within the rooftop unit to provide the heating requirements per the schedule shown on the plans. The electric heater shall be wired in such a manner as to provide two equal steps of capacity (80 and 108 kW) or a single step of capacity (40 kW). The furnace shall be an industrial grade design using an open coil(s) made of the highest grade resistance wire containing 80% nickel and 20% chromium. The resistance coil(s) shall be adequately supported in the air stream using ceramic bushings in the supporting framework. Terminals of the coil(s) shall be stainless steel with high temperature ceramic bushings. The primary high temperature protection shall be an automatic reset type thermal cut out. Secondary protection shall be an automatic reset type thermal cut out. Secondary protection shall be a replaceable thermal link. The operation of the electric heater shall be an integral part of the roof top control system. Power connection to the strip heater shall be through the single power point connection for the entire unit. Electric heat shall be ETL certified to both US and Canadian safety standards.

Hot Water Heating Coil

The manufacturer shall furnish and factory install a hot water coil in the rooftop units, as described in the following specifications. Water coil capacities and pressure drops shall be certified in accordance with ARI Standard 410. The hot water coil shall have eight fins per inch, 2 tubes per circuit, and 2" inlet and outlet connection. Primary surface shall be 1/2" OD copper tube, staggered in direction of airflow. Tubes shall be mandrel expanded to form fin bond and provide burnished, work-hardened interior surface. Return bends shall be die formed and silver-brazed to tubes. Headers shall be of heavy seamless copper tubing, silver-brazed to tubes. Connections shall be of red brass, with male pipe threads, silver brazed to headers. Connections also have 1/4" FPT drain plug on each connection. Extended surface shall consist of die-formed, continuous, aluminum fins with formed channels, and surface treatment to minimize moisture carry-over. Fins shall have fully drawn collars to accurately space fins, and to form a protective sheath for the primary surface. A structural galvanized steel casing shall protect the coil. Tube sheets on each end shall have drawn collars to support tubes. An intermediate coil support shall be provided. The coil shall be circuited to provide free draining and venting, through one vent and drain. Completed coil, including headers, connections and return bends shall be tested with 325 pounds compressed air under water. Coils shall be designed for operation at 250 psig design working pressure.

Steam Heating Coil

The manufacturer shall furnish and factory install a steam heating coil in the rooftop units, as described in the following specifications. Steam coil capacities and pressure drops shall be certified in accordance with ARI standard 410. The steam coil shall be constructed in the non-freeze style. The steam coil shall have six fins per inch, and 2" inlet, and 1 1/2" outlet connection. Tubes shall be 1" OD seamless copper tubing with a minimum wall thickness of 0.035" and expanded into the fin collars for maximum fin-tube bond. Inner distributing tubes shall be 5/8" OD seamless copper tubing with a minimum wall thickness of 1/4". The copper to copper joints shall be joined with high temperature, silver solder. Corrugated fins with integral spacing collars shall cover the entire tube surface. Headers shall be constructed of seamless copper. The header tube holes shall be extruded providing better tube to header contact for a stronger braze connection. All header connections shall be of red brass or steel, with male pipe threads and silver braze to headers. Casing shall be 16 gauge galvanized steel. Chafing shall be prevented by extruding and flaring the holes in the tube sheet and intermediate tube sheet. The core shall be pitched in the direction of the condensate connection for proper drainage. The completed coil (including headers and connections) shall be tested underwater with 325 lbs. compressed air to ensure a leak free coil.

REFRIGERATION SYSTEM

Units shall have two (25 ton), three (30 ton) or four (40 ton) independent refrigerant circuits for maximum load-matching capability. Each refrigerant circuit shall be controlled with a balance-port thermal expansion valve for maximum control at low load conditions.

Evaporator Coils

Evaporator coils shall be direct expansion type with intertwined circuiting to assure complete coil face activity during part load operation. Coil fins shall be enhanced aluminum type. Coil types shall be 3/8” OD copper, internally enhanced and mechanically expanded to bond with the fins. Coil casing shall be fabricated from heavy gauge galvanized steel. All coils shall be pressure tested at a minimum of 450 PSIG. A galvanized powder painted steel drain pan shall be provided under the entire length and width of the evaporator coil, including all return bends. The main drain pan shall be sloped a total of 1/4” per foot towards the drainage point. Main drain pan shall be easily cleanable in the field. The condensate drain opening shall be flush with the bottom of the drain pan

to allow complete drainage. Coils in excess of 48 inches high shall have an intermediate drain pan, also fabricated of galvanized powder painted steel extending the entire finned length of the coil to provide better water drainage. Drainage from the intermediate drain pan shall be to the primary drain pan. OPTIONAL: Drain pans shall be constructed of stainless steel. OPTIONAL: Evaporator coils shall be protected by the Technicoat 10-1 four coat process. Coils shall be dipped in a phenolic coating, which provides substantial resistance to corrosion of aluminum and copper. OPTIONAL: Copper-tube/ Copper-finned evaporator coil assemblies.

Compressors

Units shall have two (25 ton), three (30 ton) or four (40 ton) industrial duty hermetic scroll compressors, independently piped and charged. Compressor frame shall be cast iron, with cast iron fixed and orbiting scrolls. Compressors shall be internally protected with thermal pressure relief. Each compressor shall include a discharge line check valve.Compressors shall be vibration isolated from the unit, and installed in an easily accessible area of the unit.

Condenser Coils

Condenser coils shall have 3/8” seamless copper tubes, arranged in staggered rows, mechanically expanded into aluminum fins. Coils shall be protected from hail damage with a V configuration, with individual flat coils rotated 30 from the vertical plane for each condensing circuit. Condensing coils shall have an integral subcooler for more efficient, stable operation. OPTIONAL: Condenser coils shall be protected by the TechniCoat 10-1 four coat process. Coils shall be dipped in a phenolic coating, which provides substantial resistance to corrosion of aluminum and copper. OPTIONAL: Copper-tube/Copper-finned condenser coil assemblies.

Condenser Fans and Motors

Condenser fans shall be direct drive, propeller type, discharging vertically. Condenser fan motors shall be 3 phase, totally enclosed air over (TEAO) type, with built in thermal overload protection.

Refrigerant Piping

All interconnecting piping between refrigeration components shall be copper tubing with brazed joints. Each refrigerant circuit shall be equipped with liquid line filter drier, and moisture indicating sight glass. Each circuit shall also have both high and low pressure switches installed on either side of the compressor and include shrader depressors for replacement of the pressure switches without removing charge. All small diameter distributor tubing to the evaporator coil shall be protected by polyurethane sleeves over the length of the tubing to prevent the tubes from copper-to-copper contact during shipment or operation.

Hot Gas Bypass (Optional on CV; standard on VAV)

Unit shall have hot gas bypass factory installed on the lead compressor.

CONTROLS

GENERAL DESCRIPTION

Equipment with Simplicity® as standard shall be factory run-tested through the control, after the test is complete; there will be no wires to re-connect. All control wiring points shall be tested and verified through communication.

The control shall be UL or CSA recognized. The control shall be manufactured in a manufacturing facility that is certified to ISO 9001.

COMPRESSOR CONTROL

The control shall have a five-minute Anti-Short Cycle Delay to prevent excessive compressor cycling. The control shall have a three-minute minimum run time to insure that oil gets returned to the compressor each time it starts. The minimum runtime shall be programmable up to 10 minutes.

The control shall monitor the High and Low Pressure switches separately for each refrigeration circuit. The control shall have a 30 second Low Pressure Switch bypass when it starts any compressor.

A hard compressor lockout shall occur if the control detects the same switch trip three times in a two-hour window, which starts when the first trip occurs. On the first and second trips, the control will turn the compressor off and wait five-minutes after the switch re-closes, before restarting the compressor.

The control shall be capable of operating both compressors and the economizer when there is a call for both stages of cooling.

The control shall have a means of locking out mechanical compression below a programmable low ambient trip point. This must be done without adding extra components to the unit.

The control shall have a means of locking out the mechanical compression when the economizer is operating in free cooling mode without additional components

The control shall have a means of starting the compressor before the indoor Fan comes on w1hen operating with a Thermostat in the AUTO FAN mode.

FAN CONTROL

The control shall have fully adjustable Fan ON and Fan OFF delays for both Heating and Cooling settable at the control or via communication.

The control's default Fan OFF delay for Cooling shall be 30 seconds to take advantage of the remaining capacity in the coil after the compressor has been turned off.

The control shall lock on the Fan if the high temperature limit trips three times in one hour of operation.

The control will have a software programmable Fan Mode Switch for Auto operation or Continuous operation.

When the Fan is in the Continuous mode, it will run continuously during the occupied schedule and in the Auto mode when in an unoccupied schedule.

The control shall be capable of operating the fan without a G or fan signal from the thermostat.

EQUIPMENT CONTROL FEATURES

The control shall be capable of communicating on the Standard Open protocol, Modbus® RTU.

The register data for the Modbus® must be publicly available and open.

Monitoring Software shall be provided at no cost. The monitoring software shall have a flashing icon when any unit wired to the computer has an alarm. Clicking the flashing icon shall display the fault code and the details of the fault.

The networking setup shall be completed by connecting a three-wire daisy chain cable to each unit, then powering all the units up and pushing a button on each control. There shall not be any dipswitches to configure the network address.

The control shall use a communication driver that is capable of having 64 nodes on the bus before a repeater is needed.

The control shall use non-volatile memory to store the last five alarms. There shall be a single button to push to recall these last five alarms. The alarms shall be stored first in last out. The first flash code shall be the last alarm that occurred. There shall be a button press sequence to clear the alarms in non-volatile memory.

The control shall have a button to reset compressor lockouts without powering the unit down.

The control shall have a button to clear compressor Anti-Short Cycle Delays. When this button is pressed it will only clear the Anti-Short Cycle Delays for one cycle only and not permanently.

The control will be compatible with any BAS (Building Automation System). Any BAS shall be able to control the equipment when wired to the control's Thermostat Terminal Strip.

The control shall have loading of at least 25 milliamps on all thermostat inputs for controllers and thermostats that use output TRIACs.

The control shall have a Smoke Detector Shutdown input on the board. The control shall be powered through this input, so when the Smoke Detector trips, the control will shut down the unit immediately.

The control will have low voltage protection for the contactors and will not energize a contactor if the voltage is below 19.2 VAC, to insure contactor pull-in. If the control has a compressor contactor energized when the voltage drops, it shall not de-energize the contactor until the voltage drops below 16 VAC, which is the drop out voltage for most contactors.

The control shall have a means of low ambient control without adding any additional components. The control shall have a means of cycling the compressor on for 10 minutes and off for 5 minutes to defrost the indoor coil when the out side ambient is below a low ambient switch point without adding additional components.

The control shall have a means of storing compressor run time. This data shall be available through communication. The control shall have the ability to clear this data when a compressor is replaced.

The control shall have the ability to store a name of at least 26 characters in length. The control will leave the factory with the serial number of the equipment it is in, stored in non-volatile memory in the Name location.

The control shall have the ability to store the model number of the equipment of at least 26 characters in length. The control will leave the factory with the model number of the equipment it is in, stored in non-volatile memory.

The control shall have the ability to store the serial number of the equipment of at least 26 characters in length. The control will leave the factory with the serial number of the equipment it is in, stored in non-volatile memory.

The control shall not power the contactors through the thermostat wiring. Dropping voltage over the thermostat wiring causes chattering contactors when the contactors are powered in this manner.

The control will operate and monitor up to 3 stages of heat independently.

The control shall monitor the Gas Heat operation in the heating mode. It shall monitor the gas valve when there is a call for heating. The control shall alarm when there is a call for heat and no gas valve voltage after 5 minutes.

There will only be one control board for this series of units, for both CV and VAV operation.

COMFORT CONTROL FEATURES

The control will be installed and tested at the factory where the equipment is assembled.

The control will use a Wall Senor that has a means of overriding the unoccupied mode for a programmable amount of time.

The Unoccupied Override time will be programmed in minutes up to 4 hours.

The control will use a Wall Sensor that has a warmer/cooler dial so the occupants can offset the programmed setpoint by a programmed amount between 1 and 5 degrees.

The control will have a Supply Air Sensor as standard.

The control will have a Return Air Sensor as standard.

The control will have an Outside Air Sensor as standard.

The control will use the Return Air Sensor in place of the Space Sensor if the Space Sensor fails for any reason, the control will have a 365 day Real Time Clock.

The Real Time Clock will be able to do automatic Daylight Savings Time adjustment.

The control will have an Occupancy Schedule that allows two different Occupied schedules per day for each of the seven days of the week individually.

The control will have 20 Holiday Schedules, each capable of 99 days.

The control's Holiday Schedules will have a start time associated with each schedule.

The control will control the Economizer directly.

The control will be capable of operating the Economizer using Dry Bulb, Outside Enthalpy, or Differential Enthalpy.

When the control is using Enthalpy to control the Economizer, it will also have an Outside Air Temperature enable Setpoint.

The control will use two setpoints for Supply Air Temperature for the Economizer operation. One will be for a small space cooling demand and one for a large space cooling demand.

The control will have the ability to do Demand Ventilation using one CO_2 sensor.

The control will have a programmable maximum Outside Air Damper Position for IAQ operation.

The control will have the ability to temper the ventilation air during times when heating or cooling is not required.

The control will have the ability to offset the operating setpoint based on high Humidity in the Space.

The control will have programmable limits when offsetting the Operating Setpoint to control Humidity.

The control must be able to lockout Cooling below a programmable Outside Air Temperature Setpoint.

The control will be able to lockout Heating above a programmable Outside Air Temperature Setpoint.

The control will have a Space Temperature Alarm.

The control will have a Supply Air Temperature Alarm for Heating and Cooling. The Alarm temperature will be programmable

The Control will be able to do a Pre-Occupancy Purge at a Programmable Time.

The control will have a hardware Smoke-Purge input.

The control will have the ability to read a dirty filter switch

The control will have the capability of reading a Fan proving switch.

The control will have an intelligent recovery function that will bring the space to the Occupied Setpoint just before or at the beginning of the first Occupied schedule each day. The control will learn and apply the minimum run time required to heat or cool the space to setpoint for the first Occupied period of a day.

The control will have Software controllable Mode Switches (Heat, Cool, and Fan).

The control will meter and track Unoccupied Override Time for billing purposes.

OPTIONAL COMMUNICATION TRANSLATOR

Overview

The ModLINC translator operates as a Modbus® Client providing an interface between a BACnet® control system and devices that communicate using the Modbus® RTU protocol. The ModLINC is preconfigured to provide an interface to YORK UP products equipped with an Intelli-Comfort or Simplicity-Elite controller and allows monitoring and control by a third-party BACnet® Building Automation System (BAS).

The ModLINC mounts inside the control panel of the UP unit and utilizes 24 VAC power from the unit's control transformer. One port is connected to the UP controller. The other port must be connected to the BACnet® network.

The ModLINC translator is preconfigured to obtain operational data points from the controller and expose them on a BACnet® network.

"The ModLINC device is primary a control offered and configured by York's ESG (Engineering Systems Group). The device can be used with other BACnet® MS/TP systems, but a qualified controls contractor must be involved. UP cannot support the ModLINC device beyond its hardware functionality and cannot guarantee functionality with the ISN or other third party BAS devices."

Please refer to the ModLINC Installation/Application manual Part Number 126367.

OPTIONAL CONTROL

York Commercial Comfort System (YCCS)

Provides rooftop system integration for YCCS single zone, change-over bypass and VAV systems.

AVAILABLE ACCESSORIES

The following accessories shall be available:

Partial perimeter roof curbs

14" high roof curb with wood nailer. The partial perimeter roof curb surrounds the portion of the unit which has airflow, and includes a support at the compressor end of the unit.

Burglar Bars

This accessory mounts in the supply and return opening of the partial perimeter curb to prevent entry into the building through the ductwork.

Field Installed Barometric Relief

This accessory is a set of barometric relief dampers and hood used for the millennium barometric relief option that is fully assembled for mounting to return ductwork. This accessory is intended for use on horizontal return applications.

Programmable thermostat, with or without remote sensor (required for constant volume units)

Provides 2 Heat/4 Cool control and 7 day programming.

Remote Wall Mounted Temperature Sensors

Attractive wall mounted temperature sensors are available to precisely control multiple or individual zone temperature. Sensors are available without adjustment, with override and override with programmable setpoint adjustment.

Dirty Filter Switch

A Dirty Filter pressure switch kit is available for field installation. Switches will monitor pressure drop across the units air filters and provide an alarm when filters become dirty.

Propane Conversion Kits

Contains the necessary orifices and gas valve parts to convert from natural gas to propane. Propane cannot be used on modulating gas heat units.

High Altitude Conversion Kits

These kits are required for natural gas applications between 2,000 and 6,000 feet.

Energy Recovery Ventilators

8,000 and 13,000 CFM models available. Great applications involving 30% or more of required outdoor air where energy use and comfort must be optimized.

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